ROBERT FROST AND SCIENCE:
THE SHAPING METAPHOR OF MOTION IN THE POEMS

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ABSTRACT

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By

Kathryn Gibbs Harris

The poems of Robert Frost have a simplicity or tone of ordinariness that has hidden much of the intellectual strength of the poet, especially his background in science. Although Frost's conversation often hinted that he knew more about many subjects than the poems seemed to show, most scholars have not investigated his knowledge of science, nor have many critics asked how that knowledge may have influenced his poems and his poetic theories.

A tracing of Frost's interest in science throughout his lifetime in his letters, conversations, biographical data, and related literary materials, together with a look at those scientific philosophers who most interested him, has yielded much. It has shown that Frost's theories of creativity and his own sound-of-sense technique were inspired by scientific philosophy, and by his own knowledge of physical laws. As a child, Frost learned from the writings of Emanuel Swedenborg to revere the world of nature as a mirror of spiritual reality. Later, this Swedenborgian influence was transferred to contemporary scientific philosophers and to an avid interest in scientific subjects both in and out of school.

In the period from about 1912 to 1916, when Frost was forming his esthetic ideas, the two scientific philosophers who most influenced him were William James and Henri Bergson. Frost went to Harvard to study with William James. He read James to his young family at the Derry farm where much of his poetry was written, and he taught from two texts of James to senior students at the Pinkerton academy. His interest in Bergson probably grew from James' interest in the philosopher. According to Lawrance Thompson, the poet was deeply distressed by the opinion of a minister that Henri Bergson's book, Creative Evolution, was not worth reading because Bergson must be an atheist. Because of his Swedenborgian background Frost did not think science and religion were essentially divided. Swedenborg, James, and Bergson had in common extensive writings on the subject of motion. Early, Frost must have believed poetry to flow into existence in the way that Swedenborg believed the spirit flowed into the manifest world.

Frost had also been building a practical knowledge of general science. He had friendships throughout life with men who were either scientists or informed amateurs in some branch of science. His school grades and subject preferences show his interest and competence. His aptitude allowed Frost to follow, in later years, such innovations in science as those of Einstein in space theory, and Niels Bohr in atomic theory. It is possible that much of Frost's interest in scientific knowledge came from his admiration for courageous exploration of any kind. Frost was knowledgeable in the biological sciences as well as physics; he knew something of cell theory as well as star theory.

Reinforced by both James and Bergson, Frost continued to see the importance of motion in the universe. Throughout his poems motion figures are dominant. The double process of entropy-negentropy develops interestingly in the poems, especially in the use of water imagery. Motion figures of earth, air, fire, and water lead the reader to a number of observations about the nature of motion, and show Frost's characteristic manner of relating modern and ancient wisdom; i.e., while atomic physics and flight dynamics interested him, one of the most important sources of his interest in motion was Lucretius' De Rerum Natura. Moveover, Frost's interest in thought as motion led him to study William James' concept of the stream of consciousness, and to use it as a foundation for his theory of the creation of a poem.

It can be shown from Frost's interest in and knowledge of science and scientific philosophy the ways science made his poems esthetically enjoyable. Frost's method was to present common objects from nature: animals, birds, trees, flowers, and ordinary persons--and to present them all acting or moving in a certain way from which he could draw an observation, usually an ironic, ambiguous, or paradoxical one. Frost must have perceived nature this way, as a field of components moving about in space, making a traceable track just as stars and planets do. In this important sense, and others, his vision was astronomical, as Randall Jarrell suggested.

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Patience, children, just a minute--
See the spreading circles die;
The stream and all in it
Will clear by-and-by.

Robert Louis Stevenson

This study of Robert Frost is written for Kerry.

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TABLE OF CONTENTS

		Page
Preface		1
ONE.	Robert Frost's Early Education in Science	7
	1. "Gold Dusted All We Drank and Ate"	
	2. "Some of the Best Things We Ever Said"	
	3. "The Wood-World's Torn Despair"	
	4. "Design of Darkness to Appall:	
	5. "A Sort of Tunnel in the Frost"	
TWO.	Science as Motion in the Poems	37
	1. "The Great and Only Event of All History"	
	2. "Make the Day Seem to Us Less Brief"	
THREE.	Motion in the Poems: Water	51
	1. "The Stream of Everything That Runs Away"	
	2. "This Backward Motion Toward the Source"	
	3. "Weep for What Little Things Could Make Them Glad"	
FOUR.	Motion in the Poems: Man	76
	1. "We're Plainly Made to Go"	
	2. "Wasn't There Danger of a Turn Too Much?"	
	3. "Man's Ingenuity Was Good"	
	4. "Loosely Bound"	
FIVE.	Motion in the Poems: Earth	99
	1. "To Earthward"	
	2. "A Great Wave From It"	
	3. "The Touch of Thy Dye-Dusty Wing"	
	4. "A Mid-Wood Bird"	
	5. "Every Kind of Bloom"	
	6. "Those Dark Trees"	
SIX.	Motion in the Poems: Fire and Air	116
	1. "Seeds of Fire"	
	2. "Make It Flow"	

Page

SEVEN. The Moving Lens 125

1. "I Cannot Rub the Strangeness From My Sight"
2. "We Won't Say Nothing Is Clear"
3. "Through the Interstices of Things Ajar"
4. "To Say It Was a Lens"
5. The Change to Darkness in the Sky"

EIGHT. Motes and Immensity 151

1. "The Present is Too Much For the Senses"
2. "The Seeming Facts of Light"
3. "In a Balearic Sling"
4. "Beware of Coming Too Much to the Surface"

NINE. Clarification and Departure 169

1. "An Adventure by Science"
2. "A Line of Shadowy Tracks"

TEN. A Shaping Metaphor of Motion 180

1. "I Wait for Form"
2. "Pythagoras' Comparison of the Universe with Number"
3. "A Better Wilderness of Logic"
4. "Nothing Gold Can Stay"

APPENDIX 205

BIBLIOGRAPHY 212

HEADNOTE

"I pity you having to write essays where the imagination has no chance, or next to no chance. The game is matching your author thought for thought in any of the many possible ways. Reading then becomes converse--give and take. It is only in conversation in which the reader takes part addressing himself to anything at all in the author in his subject matter or form. Just as when we talk together! Be careful to hold up our end to do our part agreeably without too much contradiction and mere opinionation. The best thing of all is going each other one better piling up the ideas anecdotes incidents like alternating hands piled upon the knee. Well its out of conversation like this with a book that you will find perhaps one idea perhaps yours perhaps the book's that will serve for the lesser ideas to center around. And there's your essay. Be brief at first. You have to be honest. You dont want to make your material seem more than it is. You wont have so much to say at first as you will have later."

--Letter from Robert Frost to Lesley Frost,
Amherst, 17 February 1919

PREFACE

In truth, an introduction should be superfluous if a critical study is itself clear and well supported. However, I would like to provide the reader with a general approach to what follows while cautioning that proofs and supports of general statements are found, or should be found, within the body of the dissertation. An almost unwieldy complexity arises in an examination of the relationship between Robert Frost's poems and science. Part of the difficulty begins with science not always knowing what it is saying, a fact that Frost took into account. That difficulty rests upon the realization of how little we know, even now, about nature. Further, Frost's responses to science were limited by his own approach which he describes for us as metaphorical. And a further problem in Frost studies is always his proclivity to keep much hidden, behind "words that tease and flout," although he does say he would like to be "not misunderstood."

Today, in 1975, there are many available sources for students of Frost's poems. For this study I have examined letters, many books which Frost read, records of conversation, interviews, and primary writings; and have sought the opinions of scholars and others who knew Frost. I have used biographical materials, especially Lawrance Thompson's valuable notes to the two volumes of his biography, and his interestingly arranged index. Biography helps one to see Frost's attitudes toward science and gives a perspective to the march, if not the

development, of the poems. But no source has been more valuable than the poems themselves: there clarification about the importance of science to Frost's poetics may finally be found.

Robert Frost was an intellectual man, a man of scientific curiosity, and his command of scientific concepts was obvious to scientists with whom he spoke. Because of his early education in science and a strong inclination to reverence and be curious about nature, his interest in science was lifelong but it paralleled his knowledge of history, and the classics. He was never more delighted than when he could find an ancient analogue for some new knowledge uncovered by science. For instance, Lucretius' De Rerum Natura propounded questions of motion which led scientists into new fields of physics: quantum mechanics and atomic physics. It gave Frost special pleasure to observe that all of modern science had come from Pythagoras' "comparison of the universe with number."

William James and Henri Bergson were the two modern scientific philosophers who most influenced Frost's thought as he was forming his own esthetics. Both philosophers were informed in science and wrote extensively on the subject of motion. Frost was probably interested in James' concept of the motions of the mind: the stream of consciousness. Bergson's thesis was that man might discover the workings of nature by intuiting nature's motions. He said that the esthetic faculty in man enabled him to know the universe, and that a sense of moving with the universe was necessary in order to discover anything about it. Bergson's view was noted by many artists of the modern period and was probably of special interest to Frost because of his own pervasive curiosity about motion.

The movement of anything, Frost believed, is revealed by the direction and the path that it takes. Everything is in motion; poems are in motion as they are composed.

> The figure is the same as for love. No one can really hold that the ecstasy should be static and stand still in one place. It begins in delight. It inclines to the impulse, it assumes direction with the first line laid down, it runs a course of lucky events, and ends in a clarification of life . . . . It finds its own name as it goes and discovers the best waiting for it in some final phrase at once wise and sad.[1]

Just as the first line or so of a poem may determine its shape, the small movements in nature may indicate something about the larger shape or the design of nature, of our existence. It is not therefore surprising to find descriptions in the poems of the motions of flowers growing, shorelines changing, mountains swinging, and the poet himself exercising at the wood pile, swinging on birch trees, and riding or walking everywhere in the New England countryside. When a fallen meteor seems to come to life again in the poet's hand, the reader knows Frost's regret for anything that has lost its individual movement and its appointed path in life.

Even in the last poems, while Frost's concerns were primarily with his public life, he was tying together the cords of his major metaphorical figure--the figure of motion itself. The modern situation was, for Frost, "an adventure by science." Thinking of the history of the world, he saw a great migration "west-northwest" to the North American continent where now the figure of the migration had become clear to him. The history of scientific thought had culminated in a technology and knowledge of the physical world beyond the accomplishments

in previous places and centuries. The problem had become how to risk the spirit in modern technology without losing it. Frost took the Wright brothers' successful experiments at Kitty Hawk beach as synechdocal. It had been near Kitty Hawk that Frost experienced an important insight or vision, a vision of the relationship between the spirit and all material things. This was probably his insight into the motion of the universe; it informs everything that he ever wrote.

Frost's poetic faith, his belief that nature somehow gave him poems, requires the suspension of disbelief about which Coleridge and Keats wrote. The willing suspension of disbelief yielded many good poems for Frost. Frost had the negative capability Keats described, but he also had much knowledge, especially from science, of the way the world worked. His poetic belief, combined with his knowledge, gave us a body of poems that we recognize as having wisdom. I think Frost understood better than most writers how his own, and possibly the poems of many other poets, actually came into being.

> A poem may be worked over once it it is in being, but it may not be worried into being. Its most precious quality will remain its having run itself and carried away the poet with it. Read it a hundred times: it will forever keep its freshness as a metal keeps its fragrance.[2]

Noticing the fragrance of metal is striking, as is his comparison of the work of art with a physical phenomenon not considered poetic in lesser poetry. Frost's involvement with science allowed him to come closer to nature as well as to the significance of his own time, so that he had a better command of the material of his poems. The

intention of this study is to help the reader of Frost's poems see something of his vision of the world, i.e. his esthetic, so that enjoyment of his poems may be somewhat enhanced.

Notes to Preface

1. Robert Frost, "The Figure a Poem Makes," Complete Poems (New York: Holt, 1949), p. vi. Cited as Poems below.

2. Poems, p. viii.

ONE. Robert Frost's Early Education in Science[1]

1. "Gold Dusted All We Drank and Ate"

Robert Frost's early education in science and in scientific philosophy helped him form his views, not only about science, but about poetry and his way of life as well. Much of his education in science was a self-education, encouraged by his earliest experiences. Much was also accomplished in classroom work. According to high school records and those from his Harvard period, Robert Frost was easily a much better than average student of scientific subjects. In school he always chose science and the classics before composition or literature courses; he was genuinely interested in science, and in the historical classics, but he openly disliked "English," especially the texts used. By the time he entered high school in Lawrence, Massachusetts, he had developed a strong curiosity about the nature of the universe and the history of man. Yet, it is not so strange that, as a young man, Frost had these preferences. They followed directly from the literature

read to him by his mother when he was a child, especially the poetry of nature and the writings of the theologian Emanuel Swedenborg who was considered a scientist in his day. The scientific curiosity established in the poet's early background stayed with him throughout his life. It perhaps became more obvious in his later poems, but it was there in the man and in the poetry from the beginning.

During his first eleven years, Robert Frost lived in San Francisco with his mother, father, and younger sister Jeannie. His father's illness with consumption and alcoholism must have caused the boy feelings of insecurity, if not terror. His mother wisely leaned on friends and the church that seemed to her the soundest, the Swedenborgian Church of the New Jerusalem into which her son was baptized. Isabelle Moodie Frost, who had emigrated from Scotland to become a schoolteacher, was evidently a person of considerable strength and intelligence. As Robert Frost would not or could not stay in school, she undertook the education of her children at home with the Swedenborgian philosophy as her guide.

Swedenborg's teachings were important in two ways for Frost's thinking. First of all, Swedenborg constantly reiterated the distinction between opposites, and at the same time stressed a necessary unity between opposites. There were always twos of everything--the divine and the physical, the spiritual and the material--and always an ultimate harmony brewing between them. For instance, in one passage Swedenborg considers that the opposites heat and light, or the will and the understanding, "flow-in into" man: the heat produces love and the light produces wisdom.[2] Second, and perhaps more influential in Frost's

poetry and life, was the insistence in all of Swedenborg's writings that all things are constantly in motion, a belief that became translated into a doctrine of action in the handbooks of the Swedenborgian church.[3]

One thing Swedenborgians were clear about was that there could be no conflict between religion and science. The divine could manifest itself only in the physical world, and knowledge of the physical world was knowledge of God. Thus, one might say that Frost was presented with a holistic attitude toward science and religion from the time of his baptism. The same kind of unifying of thought and action also dominates Frost's thought, both early and late. As he reminisced in answer to the question whether Swedenborg had been important in his early education:

> What's my philosophy? That's hard to say. I was brought up a Swedenborgian. I am not a Swedenborgian now. But there's a good deal of it left in me. I am a mystic. I believe in symbols. I believe in change and in changing symbols.[4]

Frost's mother, during the San Francisco days, purposely followed thought and with action. After reading poems to the children about daffodils and waterfowl, she walked with them to Woodward's Gardens where the children could directly observe varied forms of changing life. The gardens had both a fine botanical collection and, to a bright young boy, a memorable zoo.

In "At Woodward's Gardens," a poem first published in 1936, Frost gives an account of a zoo visit in order to make a point about experimental science.[5] There is ambiguity in the poem, but it does become plain that the experimenter is likely to lose his equipment if

he does not know what he is doing with it. The boy, having stung the knuckles of a monkey trying to teach it the use of a magnifying glass to focus the sun's rays, is astonished when the monkey grabs the glass and keeps it. The narrator in the poem comments on what the monkeys might be thinking:

> Who said it mattered
> What monkeys did or didn't understand?
> They might not understand a burning-glass.
> They might not understand the sun itself.
> It's knowing what to do with things that counts.
> (Poetry, p. 294)

Appropriate action, then, is what counts, whether in man or in monkey. The experimental scientist might well question whether or not he knows what to do with his equipment, the poet-narrator seems to suggest.

Much of the interest Frost came to have in science may have begun with British and American nature poets read to him during the San Francisco years. Mrs. Frost read aloud from Burns, Herrick, Wordsworth, and, among the Americans, from Poe, Bryant, Emerson, and Thoreau. She read aloud a complete children's novel, At the Back of the North Wind, by the Scottish theologian and novelist, George MacDonald. The book's young hero overcame the obstacles of poverty, his father's illness, and even the fear of his own death with great courage and resourcefulness. North Wind, a fantastic character, was a personification of the mutable in nature, especially of the mutability of good and evil. She was a primal force who could either sink a ship or save it, and she taught the child hero to ride at her back, and to be less afraid. Mrs. Frost was herself a good story teller who made up fairy tales and recounted the lives of various heroes, including Joan of Arc and Emanual Swedenborg.[6]

When Frost was eleven his father died, and he moved to New England with his mother and sister where he was to make his home for the rest of his life. At first the children were bored with small town life and the cold winter, but snow and ice were new phenomena for a young experimenter, and Robert Frost devised ways of discovering the properties of water in various states. The dance and disappearance of ice across an old stove delighted the children,[7] and became central to Frost's theory of poetry. He alludes to it in the introduction to his Complete Poems in what I take to be the principal statement of his poetic intention: "The figure is the same as for love. Like a piece of ice on a hot stove the poem must ride on its own melting."[8] What Frost meant by the moving melt of the poem, and of love, is later amplified in the context of his interest in the philosophies of William James and Henri Bergson. The metaphor of the ice in motion illustrates the way Frost used what he knew of natural laws to build his metaphorical language.

2. "Some of the Best Things We Ever Said"

At age twelve, Frost became active in amateur science and liked to share his experiences with enthusiastic friends. His neighbor, Charles Peabody, kept collections of flowers and of live and stuffed animals. Robert Frost spent much time at the Peabody home, and by the end of the summer of 1886 had fully established his love of shared botanizing, and of playing out-of-door country games such as riding birch trees. At this time he was also passionately in love with Charles' active and attractive sister, Sabra. In his first love letters,

written to Sabra, we find the young poet has sent pressed leaves and a few nuts as tokens of affection. Also in these letters, it is revealed that Frost liked to avoid writing his assigned literary compositions.[9] Reading and writing were not so attractive to the boy as the excitement of outdoor activities with friends. In fact, it was not until he was fourteen that he ever read a complete book on his own. This emphasis was completely changed when, at the beginning of his sophomore year in high school, Frost began to take books from the public library in Lawrence, and he read books from the personal library of Carl Burrell, an older friend at school who, like Charles Peabody, was a classmate.

But the books Frost began to read were not strictly literary. Burrell's library contained books on scientific subjects, written by scientific philosophers, and there was also a collection of American humorists. From the beginning Frost balanced a serious curiosity about the universe with "funning." He later wrote to Lawrance Thompson: "It would be found that Grant Allen wrote a book on the Evolution of the Idea of God. I grinned inside at the time."[10] Our Place Among Infinities by Richard Anthony Proctor, a noted English astronomer, interested Frost when he found it in Burrell's library because he already owned a copy that had probably belonged to his father.[11] There are essays in it on Jupiter and Saturn, and the one titled "A Giant Sun" includes a dramatic description of Sirius, Frost's favorite star mentioned often in his poems, and identified finally by name in the last book.[12] Further, Proctor wrote essays about the waste or extravagance in the universe, an idea Frost presented in his own way in his final lecture given at Dartmouth College in 1962.[13] Proctor was an

early conservationist, predicting such eventualities as the general use of solar energy.[14] Frost evidently enjoyed Proctor's speculative thought as well as the discussions on star gauging (measuring the distances to and between stars) and other such technical astronomical information. During this period also, Frost took an astronomy handbook from the public library. The handbook was to instruct him in using the newly-acquired telescope which was mounted in his own room to aid in his self-directed study of astronomy.

The shared intellectual freedom and hilarity between Frost and Burrell suggests the outrageous actions of Brad McLaughlin in the poem "The Star-Splitter." Because Brad wanted a telescope and could not afford one, he burned his house for the insurance money, and with the town taking his part he bought a telescope and took a job at the local railway station. But the outcome of much star-gazing was primarily good conversation.

> Bradford and I had out the telescope.
> We spread our two legs as we spread its three,
> Pointed our thoughts the way we pointed it,
> And standing at our leisure till the day broke,
> Said some of the best things we ever said.
> (Poetry, p. 179)

Whether or not anything was learned from the stars, star-gazing had provided a good opportunity for communication. The surrounding stars were more than a scenic backdrop for the thoughts of the two men. They gave direction to their thoughts.

Another tie between Frost's poems and the influence of his friend Burrell was that the older boy was a good amateur botanist, his special interest being orchids. Wild orchids are mentioned a number

of times in Frost's poems--the orchis calypso, rare in New England, the lady slipper and ram's horn orchises of "The Self-Seeker" and the purple-fringed orchis of "The Quest of the Purple-Fringed," first titled "The Quest of the Orchis" in The Independent in 1901. This poem conveys simply and poignantly the mystery and delight of discovering a rare wild flower, but also expresses a deep melancholy. Almost certainly written before 1897, its figurative language presents varied motion:

> Then I arose and silently wandered home,
> And I for one
> Said that the fall might come and whirl of leaves
> For summer was done.
> (Poetry, p. 343)

Perhaps in the composition of this poem, Frost was thinking of the melancholy end of summer after his senior year when he and Elinor went to different schools, and he and his friend Carl could not go botanizing anymore.

High school afforded the young poet much more freedom than many students would wish to have. In his freshman year Frost secured his mother's permission to master one subject at a time. He chose the following order, taking what he liked best first: geography, arithmetic, history--then grammar and reading. In the second year he followed a regular program including classics and history. He did so well that at the end of his junior year, in the spring 1891, he was able to pass the Harvard entrance examinations in Greek, Latin, Greek history, Roman history, algebra and geometry. He postponed the examination in English literature although he excelled in literary-related activities.

He was a popular leader of his debate club. In his senior year, as editor of the school paper, Frost wrote an essay titled "Education, Science, and Literature," in which he recommended the purchase of a telescope by the school to offset dull assignments. He proposed the reading of The Planetary and Stellar World by Ormsby MacKnight Mitchell: "No one, who reads at all . . . can read the introduction . . . and refrain from reading the whole book."[15]

There were two valedictorians of the senior class: Elinor Miriam White, and Robert Frost. At graduation Elinor White's address was about the value of conversation in daily life. Frost's, highly rhetorical speech, "A Monument to Afterthought Unveiled," was about very nearly everything. This interesting valedictory cannot be omitted in a consideration of Frost's science interests. It reflects Swedenborg's dualities and emphasis on action following thought: "Aggressive life is two-fold: theory, practice; thought, action: and concretely, poetry, statesmanship; philosophy, socialism--infinitely . . . . The afterthought of one action is the forethought of the next," the young poet wrote.[16] It is also interesting to note, in view of Frost's later role as informal poet-statesman, that he had linked poetry and statesmanship together so early.

Also, favorite literary devices which would later become central to his poetry appeared in "A Monument to Afterthought Unveiled." Synecdoche and metaphor combine in this passage in which scientific theories of the origin of life on earth are compared:

> There is a space of time when meteor and raindrop falling side by side may touch the yielding earth with equal force. The lighter outspeeding weight may seem in a space to

> strike with greater force. But who at last can tell which has the greater influence on the world, the one that bore, as scientists have said, plant life, or that which makes it live.[17]

Already, Frost was thinking of the origin of organic forms in terms of velocity, gravity and relative force or energy--but he was countering the importance of the scientists' search for origins with the gently falling raindrop. The scientific fact is that meteor and raindrop do fall at the same rate, so that the "lighter outspeeding weight" may seem to strike harder. And, interestingly, all four elements of earth, air, water and fire are present or implied. By "aggressive" Frost meant active, as in Swedenborgian thought, rather than the passive life of acceptance, its opposite that he was to write of in later poems.

3. "The Wood-World's Torn Despair"

When summer was over and the fall "whirl of leaves" had come, Frost went to college, but not to Harvard as he had planned. A Dartmouth graduate, a young chemistry teacher at Lawrence High, arranged a scholarship to Dartmouth for him. The teacher had noticed Frost's ability and interest in science when the boy worked after school in the laboratory on experiments of his own devising. Although this teacher even gave Frost an introduction to his own fraternity, Frost soon found that neither the horseplay of the students nor the formal classes were helpful. In short, authoritarian haughtiness in both professors and students made him angry. His contempt for such attitudes stayed with him for many years, and he was reminded again of the unpleasant Dartmouth experience when in 1921 he visited a small town where a group of college boys were displaying bad manners.

> They knew now that there was nothing here that they would not some day be able to scorn. I fled them as I had fled their like thirty years before at Dartmouth. I never could bear the sunsuvbijches belief that they were getting anywhere when they were getting toward their degrees or had got anywhere when they had got them. That's not it exactly; it was more their belief that they were leaving anybody behind who was not getting toward their degrees. I preferred to drop out of their company and be looked on as left behind. Of course all I had to do not to be left behind was to have one solitary idea that I could call my own in four years. That would be one more than they would have.[18]

Such an extended expression of disdain thirty years after the Dartmouth incident would indicate Frost's angry disappointment at the time.

This sense of outrage, together with the fact that Elinor was away at another school, caused Frost to leave the campus without a word before the end of the first term. But before he came to that decision, some of his solitary pursuits were of interest. He took long walks in the woods, about which the other boys taunted him, and he cherished a newly-discovered book of lyrics, Palgrave's Golden Treasury of Songs and Lyrics. Browsing in the Dartmouth library, he discovered The Independent, a New York periodical with a name he especially liked. Library and woods gave him time to reflect and resolve what to do. After a visit with Carl Burrell at the Thanksgiving recess, he returned for his belongings and departed.

Although financially meagre years were ahead, so was the formative period of Frost's poetry. For a while he did odd jobs of journalism and teaching, and when Elinor graduated from college and returned to Lawrence, Massachusetts, they were married. They taught in Frost's mother's private school, and moved to the Derry farm after several more temporary residences. But in the summer of 1896 there was time for botanizing and hiking around the New Hampshire hills. Frost wrote to Susan Hayes Ward, poetry editor of The Independent:

> Remember me to Miss Hetta please. Tell her that I am botanizing will I nill I. You make the laws and an enthusiast here is found to enforce them. I am overwhelmed with books on the subject. Mrs. W. S. Dana and I dont know who all![19]

Susan Ward had kept the young poet's hopes alive by publishing first "My Butterfly," and other early poems from time to time, and apparently, by encouraging his botany excursions. The American-Canadian poet Bliss Carman had liked "My Butterfly" when Susan Ward showed it to him, so that it was not difficult for her to convince her stern co-editor brother, William Hayes Ward, to publish it. Pleased about his marriage and newborn son, Elliott, Frost determined to go after all to Harvard, where William James was Professor of Philosophy.

He began to prepare to pass entrance examinations a second time. What he had read of James must have motivated him strongly because he passed everything and was admitted without condition. The examination subjects were significant: Greek, Latin, ancient history, English, French, and the physical sciences including astronomy and physics. But when he entered Harvard in the fall of 1897, he found that William James was on a leave of absence; later he was to remark that the teacher who influenced him the most was not there.[20]

4. "Design of Darkness to Appall"

There was an extraordinary similarity in the early educations of Robert Frost and William James. James' father was a Swedenborgian in philosophy and an exponent of Darwinism. He knew many people in the group around Emerson. William and his brother Henry engaged in debates at home on advanced topics and studied and read whatever they

liked. Like Frost, William James hated the routine of schools and colleges, and he championed the idea of free intelligent choice. His reason for living in the United States was that he believed the schools allowed more opportunities for choice and independent thought. His psychology text, which became widely used in universities, was the one Frost studied at Harvard and later used in his own teaching.

In James' psychology, Frost was able to find an exposition of the nature of thought, or of mental processes, that corresponded with what he had already guessed from his Swedenborgian background.[21] And in James' psychological study of religion, The Varieties of Religious Experience, he was able to see that religions may have value for individuals in a pragmatic sense, totally apart from any metaphysical system.[22] That is, one could decide whether to believe in life or not, and by constructive effort, cause what is believed to more or less come true. I think Frost probably structured his life in a similar way, following some of the clues in the numerous chapters on habit in James' Principles of Psychology, but more interesting for this consideration of Frost's esthetics, is James' description of mental movements such as this one that must have fascinated Frost:

> As a snowflake crystal caught in the warm hand is no longer a crystal but a drop, so instead of catching the feeling . . . we find that we have caught some substantive thing. The attempt at analysis is in fact like seizing a spinning top to catch its motion, or trying to turn up the gas quickly enough to see how the darkness looks.[23]

James stressed the difficulty of tracking mental phenomena, distinguishing between the partial and the whole. Recalling whole figures was

not easy. Further, the series of thoughts could not be understood apart from their moving nature. It was their characteristic to be in motion, to be a stream of consciousness.

While Frost worked hard on psychology at Harvard (although he did not approve of Santayana's interpretation of James), he was appreciative of lectures on historical geology. He disliked a rhetoric text in an English class because it contained nothing new. But he did well and completed courses, withdrawing toward the end of his second year because of inadequate finances and possible tuberculosis. This time he received a complimentary letter from the Dean granting a "detur" in the unfinished work. A first daughter, Lesley, was born about a month after his return to Lawrence, and Elliott died of cholera that July. The move to Derry was made the following October, and Belle Moodie Frost died in November. With the publication of "The Quest of the Orchis" in June, 1901, Frost had published only six poems in a national magazine, and one in a city newspaper, but his resolution to be recognized as a poet was firmly set.[24]

At the little farm near Derry, Carl Burrell came to help out for a while, and left Frost relatively free to conduct his poet's laboratory. He spent much time finding and transplanting wild flowers, going for walks with the children, and supervising the family's education. Believing in practical experience along with learning, when the family visited New York city, he took his two children (another son, Carol was born in 1902) to the zoo and aquarium. Although the aquarium was closed, the zoo impressed Lesley who wrote: "I remember a few animals: the elephant, the badgers (the badgers were fighting all the

time over peanuts the people threw to them,) the giraffe, the tiger, the hippopotamus, thats about all I guess."[25]

Lesley's childhood journals show that the children's study of nature was conducted so as to combine activities on the farm with lessons and assignments. Her knowledge of flowers, stars, and natural processes outdistanced her spelling ability, yet the overall form of her journal entries is impressive. In spring, at age seven, she writes of the cherry trees in the orchard:

> . . . the trees are just louded with blossoms, the bees come and take the honey and while they are getting it the pollin from the stamins get on his wings and work into the pistal and it goes down through the pistal into the seedpod and if it is too cold for the bees we won't have any fruit the seedpod won't grow bigger without the pollin and won't grow into a cherry without pollin.[26]

Clearly the process had been explained and reiterated. Frost was giving his children the sort of education he himself had received from his mother in the San Francisco years. He also read aloud to the children from all sorts of books.

Lesley particularly remembered being read to from William James. She recalled that the children were taught "all the constellations," and called out of bed at all hours of the night to see them, winter and summer.[27] She was read to until she was fifteen, even though she had begun writing at age four. Her father's intention was to stretch the imagination as prelude to more strictly intellectual discussions.

> Papa and I make beleave we can see people on mars, and children and houses and everything ells on the earth. We say

> these things when we go after the cow at night, we say we will know more than the astronomers do with tellicopes . . . and when we go in we are interrested in taulking about mars and teliscops and things.[28]

In this entry, Lesley was eight, and could see exactly how she was being taught. Learning moved from wild fantasy to the wisdom of facts, and all was reinforced by the journal essays in which the child learned to write.

Until 1911, Frost had been teaching nearby at the Pinkerton Academy, a private high school, but when he had an opportunity to teach psychology at Plymouth Normal School, a public high school, he sold the farm. He was then at last able to use texts by William James. In a course for seniors he used Talks to Teachers on Psychology, and an abridged edition of the Principles: Psychology, The Briefer Course, in his psychology class. His daughters Irma and Marjorie had been born at Derry, but after the sixth child, Elinor Bettina, died two days following her birth, he decided to sell the Derry farm. Frost taught in Plymouth for one year, sold the farm, and determined to take his family to England.

An interesting encounter occurred when Frost had visited the Wards in New York in 1911. Frost had just read the first English translation of Henri Bergson's Creative Evolution, and was very excited about it. But Ward declared that Bergson could not be worth reading because he was an atheist. This argument, according to Thompson, precipitated the composition of "In White," the first draft of "Design." Obviously, there is also some Dickinsonian influence in the poem. (Frost had given Elinor a copy of Emily Dickinson's poems in 1892).

The draft title, the rhetoric, the close meticulous observation of details in nature, the turns of wit, are all Dickinsonian. And Frost's own background in natural science, especially physics and astronomy, acted forcefully upon this fine lyric. The slow funereal movement of the lines fits the situation beautifully; the workings of nature were slow, but terrifyingly inevitable.

> I found a dimpled spider, fat and white
> On a white heal-all, holding up a moth
> Like a white piece of rigid satin cloth--
> . . .
> A snow-drop spider, a flower like froth,
> And dead wings carried like a paper kite.
> (Poetry, p. 302)

Emily Dickinson's "papa above" was not so terrifying as this grand design whose implied author plays with the world as if it were a paper kite. The poem expresses terror and awe somewhat beyond the usual metaphysical jest.

Randall Jarrell was the first to notice the astronomical tone of the poem, and to suggest that there is much more science in Frost's poetry than one would expect. Writing about "Design," he commented,

> I have given this statement of "what the poem says"--it says much more--an exaggeratedly physical, scientific form because both a metaphorically and literally astronomical view of things is so common, and so unremarked-on in Frost.[29]

Several others have remarked on the subject in response to Jarrell, but very few have even mentioned the possibility that Frost's allusions in the poems to stars or flowers (or to the Doppler effect, geodes,

velocity, relativity, mathematics, and so on) could have any basis in his own knowledge of science.[30] Generally, this predominant aspect of the poetry is still ignored, as is Frost's science-oriented interest in motion.

The motion Bergson describes, what Faulkner meant too when he said that life is change, endures and eventually permits the evolution of consciousness. The artist's intuition, therefore, is natural, And Bergson's precise meaning of intuition is basic to Frost's esthetics. In Bergson's own words:

> But it is to the very inwardness of life that intuition leads us--by intuition I mean instinct that has become disinterested, self-conscious, capable of reflecting upon its object and enlarging it indefinitely.
>
> That an effort of this kind is not impossible is proved by the existence in man of an aesthetic faculty along with normal perception. Our eye preceives the features of the living being, merely as assembled, not as mutually organized. The intention of life, the simple movement that runs along the lines, that binds them together and gives them significance, escapes it. This intention is just what the artist tries to regain.[31]

In "Design" which surely has as its background a perceived universal system of quantum mechanics and randomness, as Jarrell noted, the poet's intention is to intuit the very intention of the universe. Frost does this by observing the miniature interrelated movements of flower, spider, and dead moth. The artist, similarly, tries to regain the elusive intention, and finds that nature's statements are elusive and highly ambiguous. Frost asks why this usually blue flower is white, how the spider knows to get there, how the moth arrives at night to both flower and spider? These phenomena are ominously mixed. They are a "witches' brew." The most striking fact is that they are all

white--buy why?, the poem asks. The ambiguous answer is, "What but design of darkness to appall?/If design goven in a thing so small."

Henri Bergson had been interested in esthetics very early in his career. When he was nineteen he translated De Rerum Natura, the long philosophical poem by the Roman poet Lucretius. He also wrote an involved foreward essay and a summary of the poem which were published together with his translation and the Latin original.[31a] The theme of the poem was mutability of forms, and the intention was to comfort mankind with the thought that no form can last forever. That is, the concept of personal immortality was impossible to Lucretius, and he believed that religions caused much suffering by holding out false hopes--and fears, about the afterlife. Bergson admired Lucretius' caring spirit, as well as the Epicurean stoic philosophy it was based upon.

Frost did read De Rerum Natura, possibly in high school, and certainly later, possibly in Bergson's bi-lingual edition.[32] In at least two poems he mentions Lucretius by name. Frost's "Lucretius Versus the Lake Poets" is a minor jest poem aimed at an academic lecture in which it was evidently claimed that in one of Landor's poems "nature" meant "pretty scenery." Frost knew his Romantics better than that, and knew they took nature seriously. The lecturer had made a large, memorialized mistake. But in "Too Anxious for Rivers" Frost gives a more serious tribute to Lucretius. Origins and large movements are treated, bringing to mind the Roman poet:

> Time was we were molten, time was we were vapor.
> What set us on fire and what set us revolving,
> Lucretius the Epicurean might tell us
> 'Twas something we knew all about to begin with
> And needn't have fared into space like his master
> To find 'twas the effort, the essay of love.
> (Poetry, p. 380)

This is a good description of Bergson's elan vital, using one of James' and Bergson's favorite words, "effort." There is a nice play between "fire" and "love" and "Epicurean," the latter word most likely placed to mislead the casual reader from discovering the poem's sources, epicurean as a popular word having very little to do with the stoic philosophy of Epicurus. The idea of the whole poem is that the poet had sometimes been too anxious for streams to become rivers, too ready to speed up the natural course of things. All things have their proper motions within the total scheme of nature--this is the Lucretian doctrine expressed in modern terms by Bergson.

5. "A Sort of Tunnel in the Frost"

With his interest in James and Bergson, it is not surprising that when Frost got to London he looked up T. E. Hulme, translator and interpreter of Bergson. Frost sought out Hulme through F. S. Flint who arranged a meeting.[33] Bergson had helped Hulme get back into Cambridge after Hulme had made some departures in order to pursue the study of languages on the continent. Hulme had now become a key figure among all the new geniuses gathered in London, giving salon entertainments each Tuesday evening. The meeting between Flint, Hulme, and Frost did take place, and Frost was immediately invited to the next Tuesday salon. Evidently Hulme was an entertaining host, if one liked

"racy" stories, and Frost did. He wrote to a friend back home that he liked Hulme for his defense of British coarseness, and for some of the hilarious stories he told. Yet he reassured his New England friend that Hulme was not a profligate, nor was Frost losing his innocence: "Hulme is not immoral in thought or action. Plain-speaking is part of the conservatism he affects and preaches."[34]

Elaine Barry has observed that what Frost wanted to discuss with Hulme was probably his "sound of sense" theory--to get Hulme's views on it. But what she does not notice is the scientific and philosophical background of both men. By the sound of sense Frost had in mind what Bergson meant by intuition, what James meant by motion, and what Swedenborg meant by the constant in-flow of the spiritual into the physical. By sound of sense he meant to convey his own understanding of the "vibrant atom-whirling, star-seething quantum or micro-mechanics world," as Frost's friend Wade Van Dore has described it.[35] Frost's theory meant that the way the words were arranged in a sentence would present the intuited "sense," and that the "sense" could indeed by caught and held and transmitted by the diction of his own vital "sensed" sentences crossing traditional metrical forms. He would choose the most familiar forms as the best: blank verse, sonnet, ballad, and a few variations. This is the reason Frost did not use free verse as the Imagists and others had started to do. He believed that in free verse the meaning would just flow away. He wanted his poems to have recognizable "body" or "form." He wanted to lodge them and make them stay. Perhaps free verse was a temporary phenomenon. Meter and form could act to hold slippery things fast.

James had written that in ordinary communication "we find we have caught some substantive thing, usually the last word we were pronouncing, statically taken, and with its function, tendency, and particular meaning in the sentence quite evaporated."[36] But, if the ice moves fairly skipping across the old wood stove, and is suddenly gone as the hilarity of the children becomes wisdom--that is a sense of things worth saving. How can one catch the poignancy of life or make anything stay? For Frost the answer was the poem, but as he said, along with James, you have to know the difficulty of it. He wrote to Sidney Cox that Edward Thomas had planned to write a whole book on his "sound of sense" idea of the sentence and what that would mean for literary criticism: "the sentence sound opposing the sense of the words as in irony . . . till I establish the distinction between the grammatical sentence and the vital sentence."[37] What was this but the Bergsonian elan vital, the Jamesean sense of duration, a captured part of the stream of consciousness? A thought intuited, or a series of thoughts intuited, might "oppose" the grammatical sentence and the metrics, especially if rendered in ordinary speech rythmns.

T. E. Hulme, whose "Complete Poetical Works" were published at the back of Ezra Pound's Ripostes, was killed in World War I, but his influence on modern artistic thinking had been great. Frost gave credit to Pound for initiating the Imagist movement, but credited Hulme with naming it: "I believe our friend T. E. Hulme coined the name. An Imagist is simply one who insists on clearer sharper less muddled half realized images . . . ."[38] In an essay on Bergson, Hulme

uses the terms "tunnel" and "direction" importantly, I think, for Frost's poetic theory and for the poems that were to come later. His subject here is the evolution of conscious life:

> One can get a picture of the course of evolution in this way: it is as if a current of consciousness flowed down into a tunnel, and making efforts to advance on every side, digs galleries, most of which are stopped by a rock which is too hard, but which in one direction at least has broken through the rock and back into life again once more.
>
> This direction is the line of evolution resulting in man.[39]

Thus, with imagistic metaphorical language, T. E. Hulme interpreted Bergson for the artists and writers around London and Paris before World War I.

In February 1915, the Frosts took their children home to New England, settling on a farm in New Hampshire until his appointment to the Amherst faculty in 1917. Frost's first two volumes of poems had been published in London, and an arrangement had been made with Henry Holt and Company to publish them in the United States. His poems were selling well both at home and abroad, in spite of the war, and general recognition had arrived. Poetry published a new poem, "Snow," as its prize poem of the year 1916. In it the character Meserve, as if alluding to Hulme's description of evolution culminating in man, exclaims:

> There where
> There is a sort of tunnel in the frost--
> More like a tunnel than a hole--way down
> At the far end of it you see a stir
> And quiver like the frayed edge of the drift
> Blown in the wind. I like that--I like that.
> (Poetry, pp. 149, 159)

And, much later on, as if to take up the Bergsonian emphasis on direction as pointed out by Hulme, Frost wrote in his superb poem, "Directive,"

> Your destination and your destiny's
> A brook that was the water of the house,
> Cold as a spring as yet so near its source,
> Too lofty and original to rage.
> (We know the valley streams that when aroused
> Will leave their tatters hung on barb and thorn.)
> (Poetry, pp. 378, 379)

The direction, in this poem, is toward a belief in life in spite of destruction and the fragmented nature of symbols. Frost's direction, his "tunnel through the frost" came from a very close awareness of our involvement with nature, and also from modern science and scientific philosophers who helped him guess nature's ways.

The first time Frost's use of natural law as metaphor was noted in print was in an anonymous review in which attention was called to the final line of "The Wood-Pile." The line states the second law of thermodynamics: "With the slow smokeless burning of decay." That review--and Frost liked it--was brought to him by another botanizing friend, John W. Haines.[40] Frost realized then what he was doing in the line, for later he commented on it to F. Cudworth Flint:

> There is something in the German notion of Ding an Sich. I remember a queer mixture of wonder and satisfaction when the phrase came out in 'The Wood-Pile' about 'the slow smokeless burning of decay', that's right, you know; that's what is really is. It's better than a lesson. Isn't that the weakness of personifying things in nature? We are really disregarding the Thing Itself and making it masquerade in false clothing.[41]

If it is correct to say that Frost intended to achieve naturalness in every way, that is, to live as much as possible in harmony with nature as he understood its laws, then his poetry is surely in the mainstream

of American literature in that sense. When both science and poetry attempt to comprehend nature, they come close to their mutual source and the raging of opposition ceases. Frost dealt constantly with the opposites, or the seeming opposites, in his poetry and in his life. His manner in the poems was itself metaphorical for the naturalness and simplicity he wanted to express, and the rejection of personification was indicative of his style.

It is appropriate that Frost was interested in scientific discoveries and their implications because in our time the knowledge explosion has arrived primarily through science. The scientific emphasis in Frost's poetry became most obvious in the final volume, In the Clearing. The headnote poem to the volume restates Frost's approach to knowledge of the material world in simple rhymed trimeter verse: "We may take the view/That its derring-do/Thought of in the large/Is one mighty charge/On our human part/Of the soul's ethereal/Into the material." (Poetry, p. 436)[42] Swedenborgian spiritual inflow had reappeared, but this time with the large Jamesean difference that it is a view one may take. Much of Frost's impetus to learn science must have come from Swedenborg, yet his own explorations and experiments led him to modify Swedenborgian doctrine with more modern philosophy. One might accurately say that in Frost, nature became poetry through science.

It was perhaps easier for Frost to find his direction as a poet because of the intellectual freedom he had enjoyed as a child. He chose his subjects and combined them in his own way, sharing the excitement of exploration in new ideas with friends. He had learned

to choose. He was friendly and "funning" by temperament, but his sense of humor always shielded significance. His remark that Scientific American was his favorite literary journal, often made in academic settings, was no mere wit for the moment. Frost did indeed get literature out of such sources. As one writer commented, remembering his friendship with Frost: "One of the periodicals he read oftenest and with most enjoyment was the Scientific American. Indeed it was never safe to assume that one knew the limits of Frost's knowledge and experience."

In fact, much of the effect of the mystical in the poems was achieved through the poet's knowledge of science. Acquaintance with natural processes through scientific knowledge allowed Frost to see farther into the nature of things than he might have otherwise. As Elizabeth Isaacs noticed, Frost's interest in new scientific developments caused others to think of him as a sort of prophet or seer.[43] He could talk with men of science about their subjects, and he liked to ask them about the meaning of recent work in their particular fields of research. Because he did not often reveal his early schooling in science, scientists were often amazed by his intelligent comments and questions. For instance, Jonas Salk, the medical biologist, commented in 1956 after a discussion of diseases with Frost: "How can one man know so much about a subject of which he knows nothing?"[44] But Frost had become the sort of mystic who believed in "change and in changing symbols" drawn from the knowledge of his time.

Notes to Chapter One

1. Kathryn Gibbs Harris, "Robert Frost's Early Education in Science," The South Carolina Review 7, No. 1, (Nov., 1974), 13-33. Chapter One is a revision of this article.

2. Emanuel Swedenborg, The Nature of the Intercourse Between the Soul and the Body (New York: General Convention of the New Jerusalem Church in the United States of America, 1965), p. iii.

3. Julian K. Smith and William F. Wunsch, compilers, The Gist of Swedenborg (Philadelphia: Lippincott, 1920), p. 81.

4. Rose C. Feld, "Robert Frost Relieves his Mind," New York Times Book Review, 21 October, 1923, p. 2.

5. Robert Frost, The Poetry of Robert Frost, ed. Edward Connery Lathem (New York: Holt, Rinehart and Winston, 1969), pp. 293, 294. Cited as Poetry hereafter; to be distinguished from the 1949 edition designated as Poems.

6. Arnold E. Grade, "A Chronicle of Robert Frost's Early Reading, 1874-1899," Bulletin of the New York Public Library, 72 (1968), pp. 611-628. This list is conservative, noting only obviously evidenced books and school assignments. Hereafter as Grade, "Chronicle."

7. Lawrance Thompson, Robert Frost: The Early Years 1974-1915 (New York: Holt, 1966), p. 55. Cited as Thompson, Early Years hereafter.

8. "The Figure a Poem Makes," Poems, p. viii.

9. Selected Letters of Robert Frost, Lawrence Thompson, ed. (New York: Holt, 1964), 17, 18. Cited as Selected Letters hereafter.

10. Letter 12 June, 1948 to Lawrence Thompson, Selected Letters, p. 530.

11. Thompson, Early Years, p. 501.

12. Richard Anthony Proctor, Our Place Among Infinities: To Which are Added Essays on Astrology and the Jewish Sabbath (New York: R. Worthington, Publishers, 1880). First edition, London, 1875. Frost identifies Sirius in "One More Brevity." (Poetry, p. 419).

13. Robert Frost, "On Extravagance: A Talk," Robert Frost: Poetry and Prose, selected and edited by Edward Connery Lathem and Lawrance Thompson (New York: Holt, 1972), pp. 447-457. Cited as Poetry and Prose hereafter. Also see Proctor, "Seeming Wastes in Nature," Infinities, pp. 35-44.

14. Proctor, Infinities, p. 27.

15. Grade, "Chronicle," p. 620, item 43.

16. Thompson, Early Years, p. 130.

17. Thompson, Early Years, p. 131.

18. Letter, 15 Apr., 1921 to Louis Untermeyer, Selected Letters, p. 267.

19. Letter 15 Aug., 1896 to Susan Hayes Ward, Selected Letters, p. 28. The botany handbook Frost cites is: Frances Theodora Parsons (Mrs. W. S. Dana), A Guide to the Names, Haunts, and Habits of Our Common Wild Flowers. See Grade, "Chronicle," p. 626. "And I dont know who all" suggests there were numerous other books on the subject read by Frost at the time.

20. "Education by Presence," Poetry and Prose, 300-304. Interview first in The Christian Science Monitor, Dec. 24, 1925 by Janet Mabie. Also see Robert Frost: A Living Voice, ed. Reginald Cook. ". . . the teacher I never had was William James," p. 144.

21. Harry Gates Townsend, Philosophical Ideas in the United States (New York: The American Book Company, 1934), Chapt. 9, "Psychological Empiricism and Spiritual Pluralism," 131-156.

22. William James, Varieties of Religious Experience, A Study in Human Nature: Being the Gifford lectures on natural religion delivered at Edinburgh in 1901-1902 (New York: Longmans Green and Co., 1902).

23. William James, The Principles of Psychology, authorized edition (New York: Henry Holt, 1892) Vol. I, p. 244. This edition contains the two volumes bound together. James himself revised the Principles into a shorter version, Psychology: The Briefer Course, possibly the edition Frost used for his students. Many editions edited and abridged by others ensued.

24. I recommend the chronology by Thompson in Selected Letters, xlvii to lxiv.

25. Lesley Frost Ballentine, New Hampshire's Child: The Derry Journals of Lesley Frost, (facsim.) ed. Lawrance Thompson and Arnold Grade (Albany, N. Y.: State University of New York Press, 1969) Book VI 1908-1909, journal page 38.

26. Lesley Frost, Book III 1905-1907, journal page 26.

27. Lesley Frost Ballentine, Introduction, n. pag.

28. Lesley Frost, Book IV 1906-1907, journal pages 82, 83.

29. Randall Jarrell, "To the Laodiceans," in Poetry and the Age by Randall Jarrell (New York: Knopf, 1953), 49.

30. Please see Kathryn Gibbs Harris, "Robert Frost's Early Education in Science," The South Carolina Review, 7 No. 1 (Nov., 1974), 13-33, p. 25, n. 32 for a list of those who have mentioned Frost in relation to science. They are principally Reginald Cook, Elizabeth Isaacs, Randall Jarrell, Wade Van Dore, and Hyatt H. Waggoner.

31. Henri Bergson, Creative Evolution, authorized translation by Arthur Mitchell (New York: Modern Library, 1944), pp. 176, 177. Also, the translator's note reads: "In the writing of this translation of Professor Bergson's most important work, I was helped by the friendly interest of Professor William James . . . . It was his intention, had he lived to see the completion of this translation, himself to introduce it to English readers in a prefatory note."

31a. Henri Bergson, The Philosophy of Poetry: The Genius of Lucretius (New York: Philosophical Library, 1959), edited and translated by Wade Baskin. Preface by Baskin, pp. 3, 4.

32. Family Letters of Robert and Elinor Frost, ed. Arnold Grade (Albany, N. Y.: SUNY Press, 1972), pp. 177-180. RF to Lesley, late winter 1935: "It was in my head all the summer I was in California reading Lucretius De Rerum Natura." Hereafter, Family Letters.

33. Robert Frost on Writing, edited with introductory essay by Elaine Barry, New Brunswick, N. J.: Rutgets University Press, 1973), p. 18.

34. Letter, 23 Feb., 1914, to Ernest L. Silver, Selected Letters, p. 117.

35. Wade Van Dore, "In Robert Frost's Rubbers," Michigan Quarterly Review, 11, No. 2 (1973), p. 124. Mr. Van Dore is an amateur scientist and outdoorsman. He worked for Frost on his farms as Burrell had done.

36. James, Principles, p. 244.

37. Thompson, Early Years, p. 453.

38. Family Letters, p. 162.

39. T. E. Hulme, Speculations: Essays on Humanism and the Philosophy of Art, ed. Herbert Read, foreword by Jacob Epstein (New York: Harcourt, Brace and Co., 1924) pp. 210, 211. Read notes Ezra Pound's publication of the five poems by Hulme as "Complete

Poetical Works of T. E. Hulme," in Pound's Ripostes. He reports that two books translated by Hulme were also published during his lifetime: Bergson's Introduction to Metaphysics, and Sorel's Reflections on Violence to which he wrote a critical introduction. This selection of Hulme's writings includes material from Hulme's MSS. and notebooks, essays on humanism, a theory of modern art, Romanticism and Classicism, Bergson's theory of art, on a theory of intensive manifolds, and an interpretation of Bergson's philosophy. Notes called "Cinders," notes on Sorel, and a plan for a book are added in an appendix, along with the poems. Hulme, like Hemingway, did not like humanism.

40. Letter, c. 1 July, 1914 to John W. Haines, pp. 127, 128. Selected Letters, 128, 129. Thompson notes (p. 127) that on each of two visits back to England, Frost visited Haines. As this letter indicates, Frost liked Haines' casual manner, asking him "over here to sprawl--not call." He cherished their botany explorations in England" by the light of a match in your English winter twilight and for the evenings by your books of all the poets," as he wrote later to Haines (p. 205). Haines was a barrister, as well as amateur botanist and poet.

41. F. Cudworth Flint, "A Few Touches of Frost," The Southern Review, 2, No. 4, New series (October, 1966), 830-838. Note, p. 835.

42. Also see Robert Frost, In the Clearing (New York: Holt, 1962). Headnote page, n. pag.

43. Flint, "Touches of Frost," p. 833.

44. Elizabeth Isaacs, An Introduction to Robert Frost (Denver: Allan Swallow, 1962), p. 159.

45. Anon. "Wise Man," Colliers, 27 Apr. 1956, p. 42.

TWO. Science as Motion in the Poems

1. "The Great and Only Event of All History"

When Robert Frost said that the great and only event of all history was "science plunging deeper into matter,"[1] he meant that the knowledge explosion in our time outdistanced any in remembered experience. We have learned archeologically from the earth and astronomically from the skies; we have seen farther into the structure of matter than the human eye can see, by the instruments and ingenuities of science. New knowledge always always seems more than can be grasped at first, but the present extensiveness of scientific knowledge is overwhelming. Yet, as in Frost's early years, change remains; the most certain thing in the universe is change itself. William James and Henri Bergson in their philosophies, and Charles Darwin in the biological sciences, all emphasized change in the universe. Natural laws were in fact descriptions of processes, of changes. Entropy, the

second law of thermodynamics, is, for instance, the tendency in nature for all things to return to waste, to run down; i.e., decay. The opposite process, negentropy, is its counterpart: life taking on form and differentiating, culminating in the organism known as man. Because these large processes are known to exist universally they can be termed scientific or natural laws. (We use the term "law" for scientific theory, following Descarte's usage.) Any particular entity or organism is itself a process or group of processes, and is often so viewed by the scientific eye. For the purpose of this study of Frost's poems, I will consider therefore science from the point of view of the study of motion and of the relationships between motions. Change, as Eddington often observed, is always relative.

One physical scientist who sees the universe entirely as motion has expressed the general view this way:

> All is slower or faster motion, from visible motion to invisible molecular and atomic motion, and all is transition from one kind of motion into another. In the transformation of kinetic into caloric energy we have an example of such a transition from visible, i.e. slow motion, into invisible, i.e. rapid motion.[2]

This is a description of the process of digesting food, common to all animals, and is similar to the process of thermodynamical entropy-negentropy which is taking place everywhere, whether wood burns in a fireplace or is left in the field to decay as in Frost's poem, "The Wood-Pile." Negentropy is most obviously dominant in the motion of early growth of organisms, however. We have all seen films in which the motions of plant growth are telescoped in time from several weeks to a few cinematic minutes. Bean sprouts dance up out of the soil, "shouldering the earth crumbs," as Frost wrote, and flowers quake and

hesitate in their tropism toward the sun. They are stronger, for the moment, than all the opposing entropic strength of the universe.

As even more an amateur astronomer than botanist and general biologist, Frost studied and thought about the motions of the stars and planets, and of their universe. Stars to him were wonderful individual entities, always symbolic of the separate and distinct individual, and it was not natural to him that they should lose their movement or direction and be used for any purpose but their own. In "A Star in a Stoneboat" he expresses this feeling by investing a fallen meteor with some of its lost motion. He says the meteor had been a world of its own like ours, with poles, and needed only "a spin/To show its worldly nature and begin/To chafe and shuffle in my calloused palm/And run off in strange tangents with my arm." (Poetry, p. 174) The fallen star is to be carted off in a stoneboat sledge to become part of a wall among fieldstones. There is some humor in the poet's fanciful exaggeration, and yet the principal effect of the poem is the revelation of something of the mystery of motion itself as it applies, perhaps, to the individual human life.

Frost was certainly not the only modern poet to notice the arrival of an age of science. The predominance of science in the early twentieth century was taken into account in various ways my major poets other than Frost, notably by Ezra Pound. In his A B C of Reading which helped to educate young poets and artists toward discovering their own esthetic principles, Pound insisted that the way to learn to read poems was simply to read hundreds of them and compare them, just as the researcher in the biological sciences will compare hundreds of

slides under the microscope. Indeed there was much talk generally at the time Frost and Pound met in London about the relationship between science and the arts. One proponent of assimilating scientific knowledge into the arts was Aldous Huxley who wrote in his book Literature and Science of Pound's early Cantos:

> I admire the poem, but wish that its author, il miglior fabbro and consummate purifier of the words of the tribe, might have used his talents to transfigure some of the findings of modern science, thus making it possible for this new raw material to take its place, along with the traditional subject matters of poetry, in a work of the highest literary art.[3]

While Huxley's observation may be unfair in the sense that Pound's intention need not have been the one he suggests, and Pound might still have claimed there was sufficient science in the Cantos, Huxley's comment is interesting as general criticism of the literature of the time. Why should new scientific knowledge not turn up more generally in poetry? Yet Huxley's view seems not to have been taken up by many other critics. Even Frost did not draw upon science as a direct critical statement until his later talks, and in his last poems, although he was using the new "raw material" all along.

Writing to his daughter Lesley in 1935 about the Imagist movement in poetry, Frost noted that it lacked the two kinds of images he had the most of in his own poems, those of sound and of motion: "Strange with all their modernity and psychology they didn't have more to say about ear images and other images--even kinesthetic."[4] But at the same time he does give credit to Ezra Pound as a contributor and initiator of a better style in modern poetry. His comment interestingly plays upon the words "mover" and "movement:"

> Ezra Pound was Prime Mover in the Movement and must always have the credit for what's in it. . . . Pound began to talk very early about rhythm alone without meter . . . . He was the first Imagist too.[5]

The idea of "rhythm alone" must have interested Frost in connection with his own sound of sense voice rhythms. Of course, these comments tell us more about Frost's thinking than they present the situation of the early Imagists with fairness. After all, Pound's early departure from Imagism was in order to found the new Vorticism movement, or the "movement of movement" as Roger Meiners terms it. [personal communication] And it cannot be said that Pound founded the Imagists on the basis of his work alone, nor that sound imagery was lacking in the early poems of H. D. Motion figures, however, in the sense that Frost understood them, as well as a continuity by way of connectives in a poem, were certainly entirely lacking in The Waste Land in its pastiche or collage style, as well as in Pound's Cantos. The influence of the Japanese haiku required the reader to supply the mystical motion between the particular instance and the general truth, and therefore also contributed to the impression of lack of movement in the Imagist poem. But the Imagists were always busy in other forms, and H. D.'s poetic novels, and even later poetic criticism, Aldington's novels and translations, Amy Lowell's polyphonic prose, all contained interesting forms of movement. Much early Imagist verse gave the impression of being static, however, because of its tenet to present, not explain, and because of the oriental influences of haiku and Chinese ideogram Pound was beginning to explore.

What Frost wanted was that the sense of the movement present in the poet when he writes the poem can be perceived directly by the reader. He thought of the process of creativity as a continuous motion that created again the emotion of the poet for the reader, drawing the poem's figure, so to speak. "No tears in the writer, no tears in the reader. No surprise for the writer, no surprise for the reader. For me the initial delight is in the surprise of remembering something I didn't know I knew . . . . It can never lose its sense of a meaning that once unfolded by surprise as it went."[7] Frost refers here to the psychological figure that wells up into consciousness from feeling states. William James believed that motor activity was closely related to the stream of consciousness, that we are able to know processes around us and their relationships because of our awareness of our own bodily movements. That is, we do not think with a static brain, but with our whole physical being. In this connection it is easy to see why Frost's view of the poem conflicted with, say, The Waste Land, in which the reader has to supply the connectives, and can do so properly only after considerable reference work. On the other hand, Frost enjoyed explaining the processes of nature, or presenting them as metaphorical, in simple or seemingly simple terms. Even in letters to his own family the descriptions of scientific theories are simply and aptly done.

In many such letters, Frost mentions scientists he knew or knew of, as he describes their theories. Three letters to his grandson Prescott show his interest in sharing science with the family. Shortly

after the death of Elinor Frost in 1938, he wrote to Prescott encouraging him to get his short wave radio set working again, saying that Elinor had said she never knew a boy or girl she liked better.

> We'll keep such things locked in our hearts when we write . . . we'll speak of the ordinary things that happen to us and occur to us in our everyday life. Tell me especially about any ideas you have in mechanics.[8]

The next year, from Boston, Frost writes to Prescott a careful description of phases of the moon, explaining eclipses and the proof that the earth is round by its curved shadow on the moon. The letter is illustrated with drawings of the moon's phases. And, in 1941 Prescott received a letter from Frost describing Millikan's ray theory, Bohr's atom, with allusions to the "exploding" universe (i.e. expanding) and to the usefulness of the Doppler effect in astronomy. This letter concludes: "I'll send along the Technology Reviews when I have got my capacity out of them," another indication of the probability of Frost's additional readings in science being much wider than scholars have recorded.[8a]

A letter to Frost's son Carol, Prescott's father, is about Einstein, and especially interesting in its scientific commentary. Carol, in November, 1931, was living in California, and had evidently written his parents about the mountain clinbing he was doing there. Climbing was often a family venture for the Frosts. But mountains made Frost think of science.

> I'm reminded of your mountains almost every day by something in the New York Times about the doings in astronomy at Mount Wilson. That is one of the most exciting places in the world just now. Einstein is going back there to work on his theories of the

> universe. He says gravitation and acceleration (speeding up) are the same thing. You can see how gravitation and acceleration may be closely connected by the way you feel heavier when an elevator speeds up with you.[9]

This simplification of Einstein's relativity theory as it applies to gravitation makes the theory seem perfectly obvious. It was not, of course, obvious to scientists prior to Einstein. It might be noticed, too, that Frost's manner of explaining it is to cast the concept into moving processes whereas Einstein's original mathematical explanation was necessarily abstract, and would seem to have nothing to do with motion except inferentially.

In an undated letter about 1950, Frost writes to Lesley alluding to cyclotrons. But in this letter he is using science to make a point about poetry. He refers to "the realm where in the cyclotrons nothing is perceptibly becoming something.[9a] He is explaining how the lyric impulse cannot remain pure but must take on form or "burden." "Nothing," he says of poetry, "can be done with nothing. Nothing but weight can put on weightiness. The moist diaphenous wings carry a burden pollen from flower to flower. No song without a burden." The poem moves from the ethereal to the substantial, he writes, and compares his concept of the creation of a poem with the creation of matter, so to speak, within the cyclotrons. The physical world is important; the forms of poems are important.

In the family letters several more scientists who were family friends are mentioned by familiar names. One is "Toggles" Thompson, a chemistry professor, another is "Davy" Todd, director of the Observatory at Amherst College for a time while the Frosts lived in Amherst. Another was Elmer Hjort, a professor of physics who lived on a farm in

Florida where Frost had lived, and where the children were going to live or visit.[9b] Frost wrote to both Carol's wife Lillian, and to Lesley, that the Hjorts were "the kind you'll like."[10] Further, the Frost family had kept up correspondence with the Haines family in England with whom they had become friends when Haines and Frost went botanizing together, and with Edward Thomas and others. Frost's choices of friends for himself and even for his family seemed to lean away from the literary circles and toward science, a departure from the usual path for poets at the time.

2. "Make the Day Seem to Us Less Brief"

Frost's poetry expresses the wish throughout to have life continue, to have it last. In "One Step Backward Taken" he describes the movement by which he avoided being swept away by an avalanche, and in "A Drumlin Woodchuck" he describes a similar self-protective motion in animals, comparing the motion metaphorically to his own self-protective actions, and the survival impulse in man generally:

> All we who prefer to live
> Have a little whistle we give,
> And flash, at the least alarm
> We dive down under the farm.
> . . . .
> If I can with confidence say
> That still for another day,
> Or even another year,
> I will be there for you, my dear,
>
> It will be because, though small
> As measured against the All
> I have been so instincitively thorough
> About my crevice and burrow.
> (Poetry, p. 282)

There is humor in the comparison of woodchucks and men, but for all its irony, a fundamental fact has been revealed. Woodchucks and other wild animals do use their burrows or nests to avoid destruction. In a sense, man sees his own wisdom in the behavior of less complicated creatures. Perhaps poets, as a group, are in as much jeopardy as woodchucks are. Although Frost's was primarily an outgoing life after he received recognition for his poetry, his home was always of considerable importance to him, chiefly as a refuge, as he says in this poem.

In the early years of his marriage at the Derry farm, Frost did much of his formative writing, and his experience during the time he lived there informed much of his later poetry. In a 1952 letter to Robert Chase he explained that poetry had gotten him almost all the money he made, either directly or indirectly, and he acknowledged his debt to the Derry years.

> You might be interested to know that during my ten years in Derry the first five of them farming altogether and the last five mostly teaching but still farming a little, I wrote more than half of my first book and much more than half of my second and even quite a little of my third, though they were not published till later.
>
> I might say the core of all my writing was probably the five free years I had there on the farm . . . .[11]

The Derry years had allowed time for meditation, and for the expression of love in many lyrics, the most passionate of which is the musical "A Line Storm Song" in which the movement of the storm is felt by all the surrounding life of the woods and farm. The poem extends the imagination back into prehistory when the sea "left the shells/Before the age of the ferm."

The birds have less to say for themselves
  In the wood-world's torn despair
Than now these numberless years the elves,
  Although they are no less there:
All song of the woods is crushed like some
  Wild, easily shattered rose.
Come, be my love in the wet woods, come
  Where the boughs rain when it blows.
(Poetry, p. 26)

The motion of the poem is successful in imitation of the storm's sound, and also of the storm of feeling in the voice of the poem's speaker.

Another lyric from the Derry years directly expresses the profound wish Frost had to hold, to keep back, the immediate moment of spring. The poem says in the form of a prayer that the poet would have his family be happy in the simple movements of nature around themselves in the spring.

Oh, give us pleasure in the flowers today;
And give us not to think so far away
As the uncertain harvest; keep us here
All simply in the springing of the year.
. . . .
And make us happy in the darting bird
That suddenly above the bees is heard,
The meteor that thrusts in with needle bill,
And off a blossom in mid-air stands still.

For this is love and nothing else is love . . . .
("A Prayer in Spring," Poetry, p. 12)

That is, by being in close touch with the movements of nature, the poet and his wife and their children are part of the Bergsonian duration of all things in nature; by experiencing this sense of duration they are kept, not in the spring season, but in the sense of springing itself--in the moving process that is love, "and nothing else is love." Frost saw love as not a certain phenomenon of life followed by death, nor as

an ideal, but as a constantly changing, moving process. While love is like the springing of the year, however, the harvest is uncertain and will have its characteristic motion too. Without the motion figures of the poem, the sense of what Frost believed love to be could not be related nearly so effectively. The last line quoted above seems puzzling without this Bergsonian emphasis.

Many of Frost's poems have a mathematical-geometrical tone that comes from their motion figures. In such poems life events are described as bodies moving relationally through space. "Meeting and Passing," for instance, has the abstract mathematical "tracking" quality that is sometimes described as Frost's matter-of-fact tone. The flatness of the diction, however, is not all of the poem's technique. Figures of two persons simply move toward each other, meet, and pass by. The pure motion involved is stressed. The space-oriented conceptual diction concludes: "Afterward I went past what you had passed/Before we met, and you what I had passed." The personae of the poem move as though they were planets. The inevitability of psychological reality is described in physical astronomical terms.

Similarly, the excellent sonnet, "A Soldier," describes the death of a soldier in battle and concludes that while "missiles always make too short an arc," (that is, they had not been able to reach outer space as yet), the "obstacle that checked/And tripped the body, shot the spirit on/Further than target ever showed or shone." "Meeting and Passing" describes love; "A Soldier" describes death. Both poems are effective: the simplicity of the diction and of the figures give the poems what mathematicians term "elegance." There is a sense of

nothing extra, nothing unnecessary in them. It might be noted that because the motion figures extend throughout each poem, there is a single shaping metaphor for each poem, rather than a grouping of motion figures as we find in many others. This type of figure, drawn from the poet's sense of space geometry, was one of the kinds of motion that interested him. It first appeared in Mountain Interval, 1916, but Frost had been using motion figures from the start.

From childhood Frost's donnée was the mystique of nature. As he wrote in A Boy's Will in the highly autobiographical poem "In A Vale,"

> When I was young, we dwelt in a vale
> By a misty fen that rang all night,
> . . . .
> And thus it is I know so well
> Why the flower has odor, the bird has song.
> You have only to ask me and I can tell.
> No, not vainly there did I dwell,
> Nor vainly listen all the night long.
> (Poetry, p. 15)

This quotation gives the beginning and the end of the poem. Its center is an allegory of the voices of nature, explaining the ways of nature to the boy. These were the rhythms Frost heard and went on to seek in philosophers of science and in knowledge of science. The movements of the earth, stars, birds and flowers determined the rhythms of even the human voices of the poems. Frost's poetry is perhaps consequently, almost entirely free of influence from the other arts of his time: from painting, music, dance, and sculpture. His esthetic of motion was drawn from nature with the help of science.

Notes to Chapter Two

1. Isaacs, Introduction to RF , p. 159.
2. Constantine Brunner, Science, Spirit and Superstition (London: Allen & Unwin, 1968), p. 141.
3. Aldous Huxley, Literature and Science (New York: Harper and Row, 1963), p. 102.
4. Family Letters, p. 162.
5. Family Letters, pp. 160-162.
6. Poems, p. viii.
7. Family Letters, p. 198 and p. 228. See Grade's note, p. 229 on Bohr and Millikan.
8. Family Letters, p. 142.

8a. Family Letters, p. 260.

9. Family Letters, p. 93.

9a. Family Letters, p. 148.

9b. Family Letters, p. 179.

10. Family Letters, p. 245.
11. Letter, 4 March, 1952 to Robert Chase, Selected Letters, p. 552.

THREE. Motion in the Poems: Water

1. "The Stream of Everything that Runs Away"

One of the largest motions of the universe that interested Frost was the double process of entropy-negentropy. Between Eddington and Robert A. Millikan, a physicist, an argument had ensued whether the universe was primarily either entropy or negentropy.[1] Frost had read Eddington first, and his own attitudes and knowledge inclined toward Eddington's belief in "the running down of the universe," or entropy. Yet something was to be said for Millikan's belief that the universe was primarily "winding up," which he based on his work with cosmic rays.[2] He did not coin the term negentropy, a new word established by the physicist Leon Brillouin who related information theory to the second law of thermodynamics in 1964; nor was Frost aware of a word for the process opposite to entropy.[3] Nevertheless, it is the double process described by Frost in "West-Running Brook" which is not only Bergsonian, but takes both sides of the cosmological controversy over entropy into account. The poem is describing existence:

> It has this throwing backward on itself
> So that the fall of most of it is always
> Raising a little, sending up a little.
> Our life runs down in sending up the clock.
> The brook runs down in sending up our life.
> The sun runs down in sending up the brook.
> And there is something sending up the sun.
> (Poetry, pp. 259,260)

The second law of thermodynamics that says that by the measurement of of a certain loss of heat during work we can tell that the universe is running down, or tending toward a thermodynamical equilibrium, means that only by an enormous process of loss does any particular organism come into being. Heat loss can be measured in the laboratory, but much more work in both theory and experimentation is now going on, and the matter is far from settled.

Eddington's arguments for the power and inevitability of entropy fitted well with Frost's darkest feelings about mutability in life. Eddington believed that the universe must be understood to have a definite life span.

> I would feel more content that the universe should accomplish some great scheme of evolution, and, having achieved whatever may be achieved, lapse back into chaotic changelessness, than that its purpose be banalized by continual repetition.[4]

For Frost, too, this situation was not cause for total nihilism. One might according to William James, choose to believe whatever one liked, and live fully by making efforts toward an unverifiable goal; one's thoughts and actions might be directed in order to accomplish some worthwhile aim regardless of cosmologies. Further, according to Bergson, the artist may touch the heart of the universe with his intuition, momentarily transcending the entropic undertow of the universe; he might live, in that sense, in a state of duration which was for

Bergson the only possible immortality. It is impossible to say how far Frost was drawn toward this latter point in Bergson's philosophy, but it is possible to say that he was drawn to the problem of time in both James and Bergson. There is no way to comprehend time except through motion.

James' metaphorical phrase "stream of consciousness" must have struck deep into Frost's imagination: the mind is a stream, the universe is a stream. Time is the "stream of everything that runs away" because each thing in the universe moves entropically at its own rate toward death and disintegration. The process by which a thing has been created or integrated, and is being renewed, seems small in comparison with the apparent rush of time. In the poems, water in its various forms represents entropic movements in nature. The particular form of water--a well or brook--may be synechdoctal for the larger symbolic metaphor of motion itself. Perhaps Frost did not formulate this structure precisely and consciously before the poems "came out," but he was aware of synechdoche as a poetic device. As he wrote to his grandaughter in 1951, " . . . Madrid would serve well enough as part for the whole of Spain. (Figure known as Synechdoche.)"[5] Water appears in all forms in the poetry, whether as ice, rain, snow, rivers, brooks, oceans, pools, fountains, well water, mist, clouds, or mud. In each case the figure Frost uses is a particular instance of the double entropic principle.

Since negentropy is simply the building up process or the opposite of entropy, it is likely that Frost thought of it as he did of other seeming opposites in nature--as the obverse side of the same

thing, or the other extreme of the same process. Entropy and negentropy may be considered as descriptions of matter in its various stages. But the beginnings of the negentropic process have not yet been demonstrated in a laboratory. The "nothing becoming something" that Frost referred to in cyclotrons is not a sufficient test, nor is the chemical formation of organic cellular material. Energy loss is measurable to prove entropy, but what can be measured to prove negentropy? And even if Millikan was right about the cosmic rays' origin in outer space, Eddington was perhaps right in seeing the "birth cry" of the distant rays as very small in comparison with the extravagant entropic activities evident and observable everywhere in the universe. Frost must have puzzled over this question of the fate of the universe again and again. The poems reveal the essential death-in-life situation of entropy many times, and always effectively. Further, there is a progression in the conceptual complexity of these metaphors in the poems.

In "A Hillside Thaw," (New Hampshire, 1923) Frost begins by describing the sense of irony one feels in trying to understand the movements in nature. How can we think we know nature if we do not see how it changes just by a change in temperature?

> To think to know the country and not know
> The hillside on the day the sun lets go
> Ten million silver lizards out of snow!
> (Poetry, p. 237)

The appearance is beautiful, but while the scene is esthetically pleasing, what is really going on is mysterious. The motion is so rapid it is difficult to comprehend.

> As often as I've seen it done before
> I can't pretend to tell the way it's done.
> (Poetry, p. 237)

The poet-speaker cannot explain the natural process (he pretends), nor can he "stop the wet stampede," even when he tries by throwing himself "wet-elbowed and wet-kneed/In front of twenty others' wriggling speed." During the poem, time has been passing with the sun's descent. What the poet says he was unable to do, the moon does. Actually, the drop in temperature chills and stops the "lizards" as the moon makes the effect visible.

> The moon was waiting for her chill effect.
> I looked at nine: the swarm was turned to rock
> In every lifelike posture of the swarm,
> Transfixed on mountain slopes almost erect.
> Across each other side by side they lay.
> The spell that so could hold them as they were
> Was wrought through trees without a breath of storm
> To make a leaf, if there had been one, stir.
> It was the moon's: she held them until day,
> One lizard at the end of every ray.
> The thought of my attempting such a stay!
> (Poetry, pp. 237, 238)

Here the moon's witchery stands, ironically, for the imagination of the poet. He can make the processes of nature stay only by "capturing" them in the poem--freezing them momentarily, just as the moon seems to do at night when the temperature drops. There is nothing explicit in the poem about a change of temperature, it is implied by the disappearance of the sun, and by the times mentioned after sunset. Here, it is the sun's warmth that ironically represents the thermodynamical running down of the universe while the cooling and slowing rivulets are made to stay in the form of ice. Ice often means death in Frost's poems, but here it is a temporary and desirable condition. The total irony of the poem brings out the poet's familiar outcry: how absurd it is to try to keep anything, expecially the beautiful.

"Spring Pools," the first poem in West-Running Brook, 1928, is rendered in two iambic pentameter sestets with regular rhyme. In the first sestet, the poet declares that the pools and the flowers beside them will soon be gone.

> And yet not out by any brook or river,
> But up by roots to bring dark foliage on.
> (Poetry, p. 245)

The growth of trees requires so much water that the pools will be exhausted; then the flowers will no longer have a water source. Further, the last line of the poem refers again to the water source, this time as a source for the pools themselves in early spring. There is the movement in time, and the movement of the life source, water, as the pools and flowers become, in a sense, the foliage of the dark woods in summer.

> The trees that have it in their pent-up buds
> To darken nature and be summer woods--
> Let them think twice before they use their powers
> To blot out and drink up and sweep away
> These flowery waters and these watery flowers
> From snow that melted only yesterday.
> (Poetry, p. 245)

Not only does the last line intensify the swiftness of the movement of life through the flowers, but the third from last line with its three active verb phrases in a row, all slightly pejorative, indicates the poet's anger toward the swift passage of time, a sort of mock anger toward the trees which are made to seem ominously tyrannical.

2. "This Backward Motion Toward the Source"

If negentropy cannot be tested in a simple laboratory experiment, what is it, anyway? Following Teilhard de Chardin, the mathematician-philosopher Beatrice Bruteau explains the double process this way:

> Entropy is the measure of a movement to take things apart until they are reduced to a simple multiplicity of identical units which are merely helpless. Negentropy, or life, is connected with the movement to build up more and more complex unities which integrate diverse multiplicities in which the differentiation of the constituient elements is enhanced. And as the complexity increases, the ability of the organized being to promote still further complexification, organization, and therefore unity increases immensely.
>
> The history of the world is the history of the progress of negentropy, with entropic by-products, so to speak. According to Teilhard, the organization or complexity of a being corresponds to a certain degree of interiority, and the two increase together. But at the point where the organization, or interiority, becomes reflexive--that is, the being knows that it knows and starts organizing its organizing--it somehow transcends and escapes the entropic undertow.[6]

Frost's revelation of the dual entropy-negentropy process in his poems does not have the evolutionary hopefulness Dr. Bruteau describes. Although he expresses a kind of hopefulness in the face of it, he stresses the dark outcome no matter what progress life's complexification has made for a time toward unity.

Oliver L. Reiser, another scientific philosopher, has called negentropy the cosmic imagination, the principle in the universe that organizes itself from the unmanifest so that new forms emerge. "The 'spirit in the machine' in man and in the cosmos," Reiser wrote, "transcends the second law of thermodynamics."[7] Along with hopeful scientists such as Millikan, Bruteau and Reiser leave the question of the end of the universe open because of unknowns not yet accounted for.

Perhaps "The Census-Taker" shows Frost's sense of irony as well as any other poem that seems to comment on the situation of probable entropic dominance. He says in it that although souls may "shrink to none at all," he wants life to go on living. (Poetry, p. 176) The resonance in the ambiguity of that disparate juxtaposition of seeming opposites will not let the reader reach a conclusion. Frost's thoughts on entropy partly account for the terrible ironic distance between his belief, on the one hand, and the "heartless outer black" of his poetry on the other.

The idea of a source or origin of life is an inseparable part of the negentropy question. Frost has two quest poems in which the origin or source is a form of water: "The Mountain," from North of Boston, 1914, and "A Fountain, A Bottle, A Donkey's Ears, and Some Books," from New Hampshire, 1924. These poems are both about journeys in which something is discovered, but not what the poet set out to find. They call to mind the analogue of William James' view that religious belief may be held for the beneficial effects along the way, whether or not it may be found true or discoverable as existent. In "The Mountain" the source-water figure is the "spring,/Right on the summit, almost like a fountain," while in "A Fountain," the goal is a Mormon baptismal font and spring, a historical landmark the poet has heard is located in the area. Each poem includes a reluctant guide who has never been to the goal the poet is interested in. "I'd take you, but I'm bound the other way," the guide in "The Mountain" explains.

But especially the idea of a spiritual journey is closely related in Frost's poems to natural processes so that, as Sister

Bernetta Quinn expressed it in a discussion of "Nothing Gold Can Stay," the reader experiences a "symbolic landscape."[8] In "The Mountain," Frost's sense of spatial kinesthetic form makes his initial description of the landscape seem the surreal simplistic forms remembered from a dream.

> I noticed that I missed stars in the west,
> Where its black body cut into the sky.
> Near me it seemed: I felt it like a wall
> Behind which I was sheltered from a wind.
> (Poetry, p.40)

The next morning when the poet-narrator goes for a walk toward the mountain, a river and the fields it runs through provide a description of entropic undertow.

> The river at the time was fallen away,
> And made a widespread brawl on cobblestones;
> But the signs showed what it had done in spring:
> Good grassland gullied out, and in the grass
> Ridges of sand, and driftwood stripped of bark.
> (Poetry, p. 40)

Although often life-supporting, water can also become destructive.

To introduce the man with whom he will discuss the mountains and its spring, Frost uses the humor of slow motion. The slowness is in contrast to his own agile morning pace.

> I crossed the river and swung round the mountain.
> And there I met a man who moved so slow
> With white-faced oxen, in a heavy cart,
> It seemed no harm to stop him altogether.
> (Poetry, p. 41)

The two men exchange pleasantries and some information while the poet wonders about climbing the mountain and, noticing a dry ravine at its base, inquires whether that is a pathway up.

Now, although the guide had bragged about the reputed spring at the top of the mountain, his evasions begin. Once a man had climbed the mountain, he says, but when the climber was asked about the spring he merely told about another form of water somewhere else:

> "He said there was a lake
> Somewhere in Ireland on a mountain top."
>
> "But a lake's different. What about the spring?"
>
> "He never got up high enough to see.
> That's why I don't advise your trying this side.
> He tried this side."
>
> (Poetry, p. 41)

But in spite of the fact that the guide himself has never been up the mountain, he can describe the spring, or beginning of the brook at the mountaintop as if he had been there. Now the poet wants to climb the mountain, imagining how the view would be from "great granite terraces." The guide had boasted,

> "There's a brook
>
> That starts up on it somewhere--I've heard say
> Right on the top, tip-top--a curious thing
> But what would interest you about the brook,
> It's always cold in summer, warm in winter.
> One of the great sights going is to see
> It steam in winter like an ox's breath,
> Until the bushes all along its banks
> Are inch-deep with the frosty spines and bristles--
> You know the kind. Then let the sun shine on it!"
>
> (Poetry, p. 42)

This is the life-source, the Bergsonian elan vital at its imagined point of origin.

A little later in the discussion the man admits that he supposes the water does not change, but "all the fun's in how you say a thing." This water of changeless temperature makes a new metaphorical

symbol for the possible escape from entropic change. As the conversation is over, Frost lets the man and his oxen make the final figure of the poem:

> He drew the oxen toward him with light touches
> Of his slim goad on nose and offside flank,
> Gave them their marching orders and was moving.
> (Poetry, p. 44)

The effect is of motion continuing offstage as the scene closes, and suggests the implied continuing action of an open-ended novel.

In "A Fountain," the guide insists on showing the poet tourist attractions as they walk over the countryside. The donkey's ears are two avalanches down the side of a mountain, the bottle is a vegetation stain on the top of a cliff, "a likeness to surprise the thrilly tourist;" but the Mormon baptismal font, the poet's goal, is nowhere to be found. "I want my fountain," the poet persists. At last, the two arrive at an abandoned house where an invalid woman poet once lived. The house is empty except for a few boxes of her book of poems in the attic.

> A whole edition in a packing case
> That, overflowing like a horn of plenty,
> Or like the poetess's heart of love,
> Had spilled them near the window, toward the light
> Where driven rain had wet and swollen them.
> (Poetry, p. 216)

The box of books has become a substitute fountain, spilling toward the light. After the poet and his guide read something in the books, and a few more motion figures are presented--one of a book sailing through the window, "only to tumble like a stricken bird," while "the attic wasps went missing by like bullets,"--they start home. Like a symbolic fountain, the poet says, the books would suffice "for the time being."

In contrast, one of Frost's finest short lyrics is "Dust of Snow." Here, too, water symbolism is at work. The movement of a bird sends down snow like a happy message, lifting the poet's spirits on an otherwise gloomy day.

> The way a crow
> Shook down on me
> The dust of snow
> From a hemlock tree
>
> Has given my heart
> A change of mood
> And saved some part
> Of a day I had rued.
> (Poetry, p. 221)

Frost's attentiveness to the motions of nature (here in the sense of out-of-doors, as well as laws of nature), has here revealed his view of the way nature communicates. Nature is a huge mime show or ballet: the message is in the movement of its dance. The crow, busy about its own activities, or possibly in the act of landing on a branch above the poet's head, has shaken snow onto the unsuspecting poet. But the poem's diction suggests that the action was purposeful. It was the unstated "way" the crow performed the action; it energizes the poet, it cheers him up. The fact that the motion is suggested and not closely described gives the poetic power that comes from ambiguity. But the point of the crow's action is that it is followed by a psychological action in the poet: a "change of mood." It is clearly a kind of message sent and received. The poet's mental motions imitate nature's.

But the reader needs to be cautious here and elsewhere about Frost's symbols. They are not always consistent, but are, as he said, "changing." While snow dust symbolized a cheerful message in "Dust of

Snow," and ice symbolized beauty in "A Hillside Thaw," ice symbolizes hate in "Fire and Ice." Further, ice is symbolic of a terrible beauty in "Birches," while in "Two Tramps in Mud-Time" water is a good thing but "lurking frost" will "show on the water its crystal teeth." (Poetry, p. 276) Such seeming inconsistencies explore the ambiguities or alternatives of the poet's subjects, and are therefore changing symbols. As in entropy-negentropy, the stream of existence may take many forms, and the poet's only obligation is to reveal it in some way. Each poem, however, will have its inner consistency, and the critic's task is to find the way toward clarification that the poet took; for example, the brook figure changes interestingly, and is indeed central to Frost's poems. A tracing of it will show how Frost's water symbolism changes as he describes entropy-negentropy progressively more fully. I will therefore discuss the four most prominent examples of the brook figure, in order of their publication.

The brook of "Hyla Brook" was located on the Derry farm, and meant much to the poet and his family.[9] It appears in a fifteen line sonnet which varies only slightly in rhyme scheme. Here are little frogs, the "hyla breed" who make the brook lively with song in spring, until it sinks underground for the summer season. The hyla have an interesting etymology. The Greek word hyle means matter: a hylicist is therefore a materialist.[10] Frost had named the brook himself. When the hyla have run "out of song and speed," the brook has either gone below ground,

> (And taken with it all the Hyla breed
> That shouted in the mist a month ago,
> Like ghost of sleigh bells in a ghost of snow)--
> Or flourished and come up in jewelweed,
> Weak foliage that is blown upon and bent
> Even against the way its waters went.
> (Poetry, p. 119)

In this poem, the poet's memory keeps the lively flow of the brook water in mind. The snow and wind add to the melancholy tone of loss through time. All that remains is an imprint in the earth symbolic of of the poet's memory.

> Its bed is left a faded paper sheet
> Of dead leaves stuck together by the heat--
> A brook to none but who remember long.
> (Poetry, p. 119)

Possibly this is also a reference to the Derry brook as source for the early poems, suggested by "paper sheet." Even this static figure is described by the active phrase, "stuck together." Earth's old enemy, the thermodynamical process of entropy, has stuck the leaves together: "by the heat." The poem concludes with the ironic affirmation that the poet loves the brook nevertheless, because "we love the things we love for what they are."

In "A Brook in the City" the water serves man better above ground than in the "fetid darkness still to live and run," functioning as a sewer. Once it was a brook by a country house that is now inside the city. The poet wonders about the brook

> That held the house as in an elbow-crook?
> I ask as one who knew the brook, its strength
> And impulse, having dipped a finger length
> And made it leap my knuckle, having tossed
> A flower to try its currents where they crossed.
> (Poetry, p. 231)

The brook's cross currents fit the larger symbol, and the little leap of water will become, in "West-Running Brook" a wave, off a "jut of shore."

Many scholars have commented favorably on "West-Running Brook," and several have cited its scientific possibilities.[10] Thompson sees that the brook refers to the Bergsonian elan vital, and so does Hyatt Waggoner, but reads the poem without religious overtones. I think there are a number of reasons why the poem is effective. First, it is an immediate and intimate poem, taking place between members of a family who know each other very well: en tais philiais, as W. K. Wimsatt renders the phrase from Aristotle's Poetics.[11] This gives the conversation between husband and wife a poignancy not felt in some of the other dialog poems between the poet and strangers--in contrast to the villager and the poet in "The Mountain," for instance. In this poem the third character is in a sense the brook itself.

> As you and I are married to each other,
> We'll both be married to the brook. We'll build
> Our bridge across it, and the bridge shall be
> Our arm thrown over it asleep beside it.
> (Poetry, p. 258)

The poet-speaker's intention is not only to fulfill his love through marriage, but to establish his marriage in its relationship to the phenomena of nature symbolized by the brook. The marriage relationship paradoxically becomes more intimate because of the sanction of the brook. The device of conversation gives Frost an excellent chance to explore his water symbol as he could not do in the earlier brook figures. The long, sustained meditative stretches of speech are in the varied iambic "voice ways" we think of as the typical Frost line. There is an unknown speaker, besides, who appears in parentheses. The speaker states in a vital but grammatically incomplete sentence:

(The black stream, catching on a sunken rock,
Flung backward on itself in one white wave,
And the white water rode the black forever,
Not gaining but not losing, like a bird
White feathers from the struggle of whose breast
Flecked the dark stream, and flecked the darker pool
Below the point, and were at last driven wrinkled
In a white scarf against the far-shore alders.)
(Poetry, p. 258)

Yet the woman in the poem is given most of the lines to speak, and says, for one thing, that she thinks the wave is a signal to her.

The poet-husband had stated earlier that the opposing direction of the brook was like the way they trusted each other to "go by contraries," and the woman takes up this idea in order to speak of the distant origin of man.

"Speaking of contraries, see how the brook
In that white wave runs counter to itself.
It is from that in water we were from
Long, long before we were from any creature.
(Poetry, p. 259)

Eddington's argument against a repetitive universe appears next. Existence, the woman says, is not like a toy dancer, "forever in one place," but moves in time and space:

It seriously, sadly, runs away
To fill the abyss's void with emptiness.
It flows beside us in this water brook
But it flows over us. It flows between us
To separate us for a panic moment.
It flows between us, over us, and with us.
(Poetry, p. 259)

Embracing the brook, then, means that in the sense of its flow "with us," as Frost underlines the connective word to indicate its centrality, the couple is in a state of duration that Bergson says is entered by way of the esthetic faculty. Duration is this elusive feeling of moving with the universe, but existence is much more:

> And it is time, strength, tone, light, life, and love--
> And even substance lapsing unsubstantial;
> The universal cataract of death . . . .
> (Poetry, p. 259)

Again, it is the movement of these large concepts such as time and strength, here said to be in a "universal cataract," that is emphasized.

Frost describes the integral movement of life and death as not only a tunneling and swerving into the right path for the development of the consciousness of man, but as "some strange resistance in itself,/Not just a swerving, but a throwing back," and because of this opposition of direction in nature:

> the fall of most of it is always
> Raising a little, sending up a little.
> Our life runs down in sending up the clock.
> The brook runs down in sending up our life.
> The sun runs down in sending up the brook.
> And there is something sending up the sun.
> (Poetry, pp. 259, 260)

Here is another sense, perhaps, in which Frost's poetry may be said to be dramatic. That is, it reflects a large conflict of opposites in existence: an astronomical sense of the dramatic, too. But Frost wanted to come to a resolution of such large oppositions. This passage has indicated clearly, I believe, the centrality of his vision of motion. The contrary motion, the rebellion against the cataract of death, is the meaning of man.

> It is this backward motion toward the source,
> Against the stream, that most we see ourselves in,
> The tribute of the current to the source.
> It is from this in nature we are from.
> It is most us.
> (Poetry, p. 260)

The woman concludes her speech. Frost's interest in the backward step is justified. The point is the extraordinary accomplishment of nature

that man is, and the extraordinary privilege of being alive in such a form. Frost was to write later in further irony, "Nature within her inmost self divides." (Poetry, p. 468) He could have been referring to binary fission as easily as entropy-negentropy. But both division and integration are moving processes symbolized by the brook. Yet "West-Running Brook" with all its excellence is not quite Frost's culminating expression of the brook figure. His best and final expression of it was to appear in "Directive," first published in 1946; and in the volume of poems Steeple Bush, 1947.

3. "Weep for What Little Things Could Make Them Glad"

Elinor White Frost had died in 1938. "Directive" is at once a ceremonial farewell to her, and Frost's largest statement of poetic belief. By the time of the poem's first appearance in the Virginia Quarterly Review, World War II had brought a general sense of loss and confusion in the United States. The explosion of atomic bombs at the end of the war stunned the world. The opening lines of the poem seem to refer to that recent destruction, and react to the fact that the knowledge and technology of science had been in its service. In an extraordinary opening line Frost brilliantly relates the confused feelings of the time, identifying destruction with the forward cataract of entropy, and life with the rebellious retreat.

> Back out of all this now too much for us,
> Back in a time made simple by the loss
> Of detail, burned, dissolved, and broken off
> Like graveyard marble sculpture in the weather.
> (Poetry, p. 377)

The controlling movement of the poem will be the poet's walk, a pilgrimage backward in tribute to the source, the healing power of the Hyla brook symbol. Time has sculptured the figures of the graveyard stones. The poet leaves the graveyard to move through the landscape at a sedate walking pace. We go with him to see "a house that is no more a house/Upon a farm that is no more a farm." (Poetry, p. 377) The goal is the brook, but the poem will not tell us until we arrive.

As we follow the poet's somber path, a geological figure presents further time-sculpturing. It is the "chisel work of an enormous Glacier/That braced his feet against the Arctic Pole." Walking, the reader must not mind being watched from abandoned cellar holes by the eyes of "firkins," little woodland animals, nor be afraid of the rustle of leaves in the trees. The poet suggests we make up a song to cheer ourselves--but to whom else is the poem addressed? To the grandchildren the book is dedicated to, and to Elinor, probably. He comments that guides always intend to get people lost, and says if "you" are lost enough by now (the "you" of the poems is probably always Elinor):

> pull in your ladder road behind you
> And put a sign up CLOSED to all but me.
> Then make yourself at home.
> (Poetry, p. 378)

Two villages had faded into each other in the past; now both are gone. Everything about the landscape has been sculptured by time. The sense of the creatures of nature watching and potentially encroaching suggests the ominous changes in everything the poet sees.

Other entropic changes have happened nearer to the house that is no more a house. Its field has become smaller, and the children's playhouse, the "house of make-believe" is now

> Some shattered dishes underneath a pine,
> The playthings in the playhouse of the children.
> Weep for what little things could make them glad.
> (Poetry, p. 378)

"Back" is the direction of the directive the poet gives: back to childhood, back to the children's innocent make-believe, back to tears, a water symbol, a healing symbol. The direction of the self must be inward, not forward and outward. And then the poem says to weep for the house that is

> only a belilaced cellar hole,
> Now slowly closing like a dent in dough.
> This was no playhouse but a house in earnest.
> (Poetry, p. 378)

But the figure more important even than the house is Hyla brook:

> Your destination and your destiny's
> A brook that was the water of the house,
> Cold as a spring as yet so near its source,
> Too lofty and original to rage.
> (Poetry, p. 378)

The spiritual strength represented by the brook steadies the emotional raging against the destructive forces, so that for Frost, as in the Christian symbol of baptism, there is healing power against the entropic directions: "We know the valley streams that when aroused/Will leave their tatters hung on barb and thorn." And we recall the valley river at the foot of the mountain in the first instance of the water-brook figure here discussed.

But the problem of wholeness or healing in a universe that is not a closed, repetitive system, and in which everything must end incomplete, must be "broken off," or fragmented, is stated in the poem solved in a surprisingly existential way. While Frost alludes to the best known symbols of his culture such as are found in the Christian Communion and Baptism sacraments, and in the Old Testament Psalms of David, the figurative presentation of these symbols emphasizes that they, too, have undergone change. Figuratively, these culminating symbols of the poem remind the reader of the weather-sculptured gravestones and the earth changes effected by the glacier that is curiously capitalized (Glacier) at the beginning of the poem.

> I have kept hidden in the instep arch
> Of an old cedar at the waterside
> A broken drinking goblet like the Grail
> Under a spell so the wrong ones can't find it,
> So can't get saved, as Saint Mark says they mustn't.
> (I stole the goblet from the children's playhouse.)
> Here are your waters and your watering place.
> Drink and be whole again beyond confusion.
> (Poetry, p. 379)

The cedar tree alludes to the Lebanon cedars, and to the biblical tree of life representing the house of Israel, God's chosen people. The Grail, the Host of the Christian Communion, completes the continuity of the Hebraic-Christian tradition as in the larger diffused popular allegiances of our culture. Frost uses these symbols as referents for the spiritual or psychological reality he wishes to represent. One might digress to notice that in Jessie L. Weston's famous study of the legends of the Holy Grail, a spell (protection from the fearsome black hand) is always placed on the Grail so that only the worthy or chosen

knight may find it.[12] The old legends of the grail add to the quest dimension of this poem, too. The poem calls the legends "playthings in the playhouse of the children." (Poetry, p. 378)

Quest becomes hide-and-seek as the poet pretends in his diction and attitudes to be a child, a child playing at let's-pretend. The "can't get saved" phrase that troubles readers of the poem is appropriate within the context. The actions of the whole passage have become childlike. A broken glass is hidden, put under s pell, an authority figure says the wrong ones "mustn't" find it, the glass had been stolen from a playhouse--hardly the behavior of adults. This remarkable passage evokes a return to childlike belief and second innocence, the path backward that would bring spiritual healing, the path given as a directive.

The poem's inner coherence is kept, not only by an easy movement from figure to figure, but by the fact that the walk ends in attaining the long searched-for goal. In earlier quest poems, the poet stressed the fact that he could not reach the goal. In his essay, "The Constant Symbol," published the October before the first publication of "Directive," Frost wrote,

> Every single poem written regular is a symbol small or great of the way the will has to pitch into commitments deeper and deeper to a rounded conclusion and then be judged for whether any original intention it had has been strongly spent or weakly lost; be it in art, politics, school, church, business, love, or marriage--in a piece of work or in a career. Strongly spent is synonymous with kept.[13]

Frost spent and directed his own life with the kind of conscious choices recommended by William James. The word "directive" which means altering the direction of other forces but not initiating them, is a good

word to describe James' concept of the will. "Directive" copes with the redirection of feelings, attitudes, passions, towards a clarification rather than a confusion.

Through the poem, because of his belief in the close relation between nature and the poem and psychology as in Bergson, Frost could himself gain clarification.

> Poetics . . . becomes a vital source for theoretical psychology rather than a minor part of it. Bergson's work is concerned with this same process [an inner coherence of images] as the unifying theme of human consciousness.[14]

Indeed, nature imagery often gives the poems of Frost their communicating value to the reader. Water was an especially useful changing symbol for Frost's complex expression of spiritual reality mirrored in nature, at once a terrible and a healing knowledge.

Framing "Directive" on either side in Frost's 1947 volume are two more poems with water figures which, although neither has the splendid resonance of the better poem, support it as a tryptych. "One Step Backward Taken" simply states that if the poet had not stepped back in time he would have been swept away with "gulping muddy gallons" on a storm's avalanche. Presenting a water figure in another situation, "Too Anxious for Rivers," a poem ending with a tribute to Lucretius, says of a river: "I never saw so much swift water run cloudless." Here, after listing some old myths about existence, Frost voices directly the new general concern about atomic destruction.

> And how much longer a story has science
> Before she must put out the light on the children
> And tell them the rest of the story is dreaming?
> (Poetry, p. 379)

Science, who has parented our culture by telling her story, has control of the light switch: we are the innocent children, science is the knowledgeable adult. The redirection of destructive forces, now science's largest problem, however, was the same problem that Frost, and William James, considered central to psychology: the redirection of psychic forces, the redirection of energy. The problem of atomic energy in the twentieth century paralleled the problem for human energies.

Notes to Chapter Three

1. Sir Arthur Eddington, The Expanding Universe (Ann Arbor: University of Mi. Press, 1958), p. 75.

2. Asimov's Biographical Encyclopedia of Science and Technology, New rev. ed. (New York: Doubleday, 1972), pp. 540, 541.

3. Leon Brillouin, Scientific Uncertainty and Information (New York: Academic Press, 1964), pp. 8-14. See also his Science and Information Theory (New York: Academic Press, 1956), pp. 152, 153, 160, 161.

4. Eddington, The Nature of the Physical World (Ann Arbor: U. of Mi. Press, 1963), p. 86.

5. Family Letters, p. 264.

6. Letter from Dr. Beatrice Bruteau, Winston-Salem, North Carolina, Apr. 26, 1970 to the author.

7. Oliver Leslie Reiser, The Integration of Human Knowledge (Boston: Porter Sargent, 1958), p. 151.

8. "Symbolic Landscape in Frost's 'Nothing Gold Can Stay,'" English Journal 55, (1966), pp. 621-24..

9. Thompson, Early Years, p. 301. Thompson, Robert Frost: The Years of Triumph 1915-1938 (N. Y.: Holt, 1970) p. 495. Cited as Triumph hereafter.

10. Hyla, Gk. wood or forest. A tree-frog or toad, U. S. hyla pickeringi. A variant of hyle (hylae) Gk. matter, material, substance, Hylic: material, hylicist: materialist. (O. E. D.)

11. W. K. Wimsatt, Hateful Contraries (Lexington: University of Ky. Press, 1965), p. 78. "En tais philiais eggenētai ta pathē; The tragic incidents take place within the context of family relationships." Wimsatt does not render quote into Greek characters.

12. Jessie L. Weston, From Ritual to Romance (New York: Doubleday, 1957), pp. 76-78 and 175-181.

13. Selected Prose, p. 24.

14. Vsevoled Setchkarev, "Modern Poetics," Encyclopedia of Poetry and Poetics ed. Alex Preminger (Princeton, New Jersey: Princeton University Press, 1965), p. 519.

FOUR. Motion in the Poems: Man

1. "We're Plainly Made to Go"

William James wrote three books on psychology, having spent the first part of his career as a medical student and naturalist, and the later years as a philosopher.[1] In his chapters on habit, in the best known of his three psychological works, The Principles of Psychology, and in his revision of it, Psychology, The Briefer Course, he stresses the importance of muscular activity in the prompting of thoughts. In his treatment of emotion, instinct, and will, his approach is to show the relation of these three experiences to muscular activity. Further, thoughts and feelings produce movements in the body, and these muscular responses involve the total organism. As he wrote,

> Using sweeping terms and ignoring exceptions, we might say that every possible feeling produces a movement, and that the movement is a movement of the entire organism, and of each and all its parts.[2]

James also made observations about the relation between feelings and language. In his chapter on stream of consciousness where he is distinguishing between substantive and transitive states of mind, he reaches into theory of language and logic to write: "We ought to say a feeling of and, a feeling of if, a feeling of but, and a feeling of by, quite as readily as we say a feeling of blue or a feeling of cold."[3] In his poetry Frost goes one step further, perhaps, than James who says that consciousness flows. Frost shows that human thought is motion in the sense that by their movements both animals and natural laws communicate to us or have messages. This is not to go so far as present day brain wave theory which is now measurable in the laboratory in various states of consciousness; James' physiological knowledge, however, must have impressed Frost who was predisposed to include it in any consideration of man's psychological nature because of Swedenborg's extensive work in anatomy, and because of Swedenborg's tenet that action and thought were inseparable. Walking, as is everywhere a symbolic act in the poems, was also Frost's favorite activity. Although Frost never walked the great distances Coleridge and Wordsworth did, nor reached their alpine heights, he knew what to make of the Green and White mountains of New England. James called this tendency toward movement in man the will. Today we would probably call it energy.

In A Masque of Reason, 1945, the character Job makes some Jamesean comments on man in motion. Frost has him compare man to an automobile.

There's will as motor and there's will as brakes.
Reason is, I suppose, the steering gear.
The will as brakes can't stop the will as motor
For very long. We're plainly made to go.
We're going anyway and may as well
Have some say as to where we're headed for;
Just as we will be talking anyway
And may as well throw in a little sense.
(Poetry, pp. 481, 482)

There is an abundance of human figures in the poems symbolizing motion as man's principal characteristic. These characters usually do have some say about where they are going, and when they speak the poet lets them "throw in a little sense."

In general, there are three groups of human figures in Frost's poems, 1) men who represent some human trait by their motions, 2) men who are performing a certain kind of work, often with a symbolic tool such as ax or hoe, and 3) children at play. The women figures are subsidiary, except for the witches who are some of Frost's best characterizations. Frost's women such as the wife in "West-Running Brook" often speak well, but they seldom, except as witches, do anything self-directed. The reasons for this, I think, are two. First, Frost was simply not an androgenous poet, and it was therefore not natural to him to project kinesthetically the movements of women. Second, he was satirizing his own Puritan tradition in which there are no important women except witches (their counterpart, saints, were not imported from Europe). One writer has even suggested that witches symbolize Frost's demonic imagination.[4] But Job's wife, in A Masque of Reason, explains for us why Frost seemed so fond of witches, and one recalls that Frost's mother liked to tell her children the story

of Joan of Arc, burned at the stake like the New England witches were. Job's wife puts a question to God:

> I have a protest to lodge with You.
> I want to ask You if it stands to reason
> That women prophets should be burned as witches,
> Whereas men prophets are received with honor.
> (Poetry, p. 476)

God replies, "You're not a witch?" Women are treated sympathetically in Robert Frost's poetry, and their views are presented sympathetically; but Frost's poetry is not the place to look for empathic treatment of the gestures, movements, or attitudes of women. For this reason, women are not amenable to treatment here as a well-rounded group of motion figures.

The motion figures of men, as we noticed in "The Mountain," often lend themselves to comic treatment. In the light verse poem "To a Thinker," the man's thinking is characterized by the motion of shifting from side to side on his buttocks. The joke is that his kind of thought lacks direction or purpose:

> Suppose you've no direction in you
> I don't see but you must continue
> To use the gift you do possess
> And sway with reason more or less.
> (Poetry, p. 326)

Bergson wrote on the subject of laughter that comedy occurred when the movement was inappropriate to the object and its situation; motion either too slow or too fast could provoke laughter.[5] Probably one could call "Brown's Descent" something more than a light verse poem, although it is uproariously funny in its effect to many readers.

In "Brown's Descent" a much slower pace would have taken the farmer down the mountain with less risk. But exaggerated pace adds to the excitement and fun, beginning with the absurd accident of falling off the mountain in the first place. If the reader wishes to add theological background to this, the fortunate fall will do to increase the mock heroics and outrageousness of the situation. Brown lived on a "lofty" farm, so that the people below could see his lantern clearly when he did his evening chores in winter at "half-past three." Because the time is stated, we know this is to be a fall through time as well as through space, an entropic situation, a thermodynamical problem:

> And many must have seen him make
> His wild descent from there one night,
> 'Cross lots, 'cross walls, 'cross everything,
> Describing rings of lantern-light.
> (Poetry, p. 137)

The wind picks him up by his clothes and he is gone. The ballad form is used to good advantage here, the shorter quatrain in basic iambic tetramenter moving along rapidly with endangered Brown. The lantern does not go out.

> Sometimes he came with arms outspread
> Like wings, revolving in the scene
> Upon his longer axis, and
> With no small dignity of mien.
> (Poetry, p. 138)

Brown holds on to the lantern no matter what happens, battling the forces of wind and gravitation until finally he was

> Incredulous of his own bad luck.
> And then becoming reconciled
> To everything, he gave it up
> And came down like a coasting child.
> (Poetry, pp. 138, 139)

His childlike trust allows Brown to become one with duration which somehow protects him, and he reaches the bottom of the mountain unharmed.

But innocence is not Brown's only heroic quality. Finding himself at the bottom of the mountain instead of where he was before, he wastes no time putting himself again in motion to go around it.

> He bowed with grace to natural law,
> And then went round it on his feet,
> After the manner of our stock . . . .
> (Poetry, p. 139)

Brown may be the best of Frost's mock-heroic figures, his action being even more fully presented than that of Brad in "The Star-Splitter." From Mountain Interval, 1916, "Brown's Descent" sets the strength of the ordinary man against the overwhelming forces of nature. Brown passes the terrible test of existence by recognizing his relationship to nature, his place in the scheme of things, with everyone's applause.

Earlier, in North of Boston, 1914, both "Mending Wall" and "After Apple Picking" contained memorable motion figures of men. The neighbor in "Mending Wall is viewed as he moves toward the wall:

> I see him there,
> Bringing a stone grasped firmly by the top
> In each hand, like an old-stone savage armed.
> He moves in darkness as it seems to me,
> Not of woods only and the shade of trees.
> (Poetry, p. 34)

This figure moves at the right slow pace for his task as the pace of the poem moves, and he represents something of man's historical development. What is meant in part is that man keeps much of the custom established in him from long experience of his primitive environment,

from the "old-stone" age. This may be also true in present social relationships so that we often "keep the wall between us as we go."

In "After Apple-Picking" the principal figure is the poet himself who, as he begins to fall asleep, recalls in stream of consciousness fashion the muscular stimulation of the day's activities.

> My instep arch not only keeps the ache,
> It keeps the pressure of the ladder-round.
> I feel the ladder sway as the boughs bend.
> (Poetry, p. 68)

The pressure and sway determines the form the dream will take, the poet realizes. He then dreams about the apple harvest. Instead of dreaming of a wish unfulfilled, such as an apple he did not eat, he dreams that he has harvested too many apples: "I am overtired/Of the great harvest I myself desired." What troubles his sleep is that some apples fell and went to the cider heap. The sound and visual imagery of the dream are both characterized by motion: the apples swim into view and rumble down into the bin as the dream takes over the motion that had belonged to the poet during the day.

In the earliest poems, the figure of Pan in "Pan With Us," and of Sorrow in "My November Guest" are interesting because Frost dropped personification of gods, goddesses, and feelings after his first two books. (Poetry, pp. 6, 7 and 23, 24) Instead, he generalized his poem characters to have them represent some human quality such as courage or ingenuity by their movements.

In this connection we may look again more closely at the sonnet, "A Soldier," wherein the motion of falling in battle is described by the soldier, metaphorically as a lance, to represent the human characteristic of courage.

> He is that fallen lance that lies as hurled,
> That lies unlifted now, come dew, come rust,
> But still lies pointed as it plowed the dust.
> (Poetry, p. 261)

The figure's direction is clear. It did not depart from its path. Since its fall, the direction of the lance has become unalterable. Frost compares the lance with science's attempt to reach beyond the earth's orbit, outer space not being reached by the time this poem was written.

> Our missiles always make too short an arc.
> They fall, they rip the grass, they intersect
> The curve of earth, and striking, break their own . . .
> (Poetry, p. 261)

The poem goes on to say that we do not know very much about the phenomenon of death, or of this soldier's death.

> But this we know, the obstacle that checked
> And tripped the body, shot the spirit on
> Further than target ever showed or shone.
> (Poetry, pp. 261, 262)

The poem is not a discussion of the merits of battle, but a tribute to the extraordinary difference between the state of life, what Dickinson called the "distance on the look of death"--and the end of life which is death. In "The Cosmic Loneliness of Robert Frost," Howard Mumford Jones quotes this entire poem and cites the line "They make us cringe for metal-point on stone," commenting, "The scientific figure, the accuracy of the metaphor about metal-point on stone, the sense of the high idealism and the ignoble fact of war, the truth that man is trapped within the curve of earth," all point to an idealism in Frost's thought.[7] Yet whatever idealism may be found in the poem is treated ironically. The force of the poem is its dark truth, and all we know of the soldier's spirit, his ability to move, is that it is gone.

2. "Wasn't There Danger of a Turn Too Much?"

As man goes about his tasks in the world, he uses certain characteristic tools in order to get the work done, and to earn his living. The technological instruments of Frost's poems are often very simple. The scythe, the ax, the hoe, the grindstone (a tool for sharpening up other tools), and the telescope and microscope are favorite tools of the poems. The poet takes up the instrumental worth of factories in several poems, and of advances in instruments of communication: mills and telephones. What is going on technologically in our society is very well synechdoctally represented by the symbolic tools Frost selected.

First, the scythe has reference to its common emblematic meaning, time. In "Mowing," the only sound is a whispering that comes

from the motion of the scythe along the ground. "The fact is the sweetest dream that labor knows," the observation made by the poet-speaker, does not say what the long scythe is whispering. The poem never does tell us although it speculates about the scythe's message. By the last line the scythe's task is done, and the next task, making the hay, remains. Clues given to what the scythe says are 1) it is not "easy gold," 2) it may be the "heat of the sun," and 3) it may be the "lack of sound." At least we may draw from the motion of the scythe that it is a harvester, and from its common symbolic meaning that it has to do with time. The poem is merely suggestive, but knowing Frost's concern with thermodynamics, might it not have been an early attempt to describe entropy, the law tested by the amount of heat lost in time by work tending toward eventual equilibrium? But, perhaps, this may be forcing the analogy in a poem that simply suggests the sensations of mowing in the heat of the day.

"The Grindstone" also contains a scythe, and appears about a decade later than "Mowing." The poet wanted it included in the Oxford Anthology of American Literature because, he insisted, it was "a favorite child of mine and to me an image of the mighty world! You know," he wrote to Norman Holmes Pearson, "that Herschel had a grindstone theory of the universe."[8] Actually, as Pearson points out, Simon Newcomb's grindstone theory was more notable; and when traced back among astronomers it is found to originate with Decartes.[9] But it was, with its tenet that friction made things better, a rather generally acceptable nineteenth century myth about the origin of the universe. Frost is using it here to represent a psychological phenomenon, simply taking

the popular grindstone theory as a given, or a starting point. The dominant attitude of the poem is grimness, "bitter" is the term Frost uses for the childhood remembrance he describes.

The grindstone is a cumbersone and awkward tool because while someone is turning the wheel to get up speed, the person sharpening the blade necessarily slows it down, making it more difficult for the wheel-turner to produce motion.

> Having a wheel and four legs of its own
> Has never availed the cumbersome grindstone
> To get it anywhere that I can see.
> These hands helped it go, and even race;
> Not all the motion, though, they ever lent
> Not all the miles it may have thought it went,
> Have got it one step from the starting place.
> It stands beside the same old apple tree.
> (Poetry, pp. 188, 189)

The grindstone sits out in the snow when all the other farm machinery has been taken indoors. Then comes the childhood incident, and the motion figures soar.

> One summer day, all day I drove it hard,
> And someone mounted on it rode it hard,
> And he and I between us ground a blade.
>
> I gave it the preliminary spin,
> And poured on water (tears it might have been);
> And when it almost gaily jumped and flowed,
> A Father-Time-like man got on and rode,
> Armed with a scythe and spectacles that glowed.
> (Poetry p. 189)

The lenses of the spectacles of Father Time are glowing from the lost heat energy of entropic waste; his weapon is the terrible scythe of time. But it is the grindstone itself (the grindstone theory?) that is the enemy of the boy, and he thinks of it as coming to life like

the Cartesian blocks of matter which were worn by friction into a nearly spheroid shape:

> much use for years
> Had gradually worn it an oblate
> Spheroid that kicked and struggled in its gait,
> Appearing to return me hate for hate . . .
> (Poetry, pp. 189, 190)

The poet recalls that he really did not care much for the man who was grinding the scythe's blade: in fact, when the man slipped (time seemed to move less rapidly) he "laughed inside" and cranked faster although the instrument seemed to be glued.

The boy of the poem would be glad of anything that would halt "what evidently nothing could conclude." But after the man tries the blade and disinterestedly decides it needs a further turn, Frost draws his conclusion that there comes a time to let things be as they are.

> Wasn't there danger of a turn too much?
> Mightn't we make it worse instead of better?
> I was for leaving something to the whetter.
> What if it wasn't all it should be? I'd
> Be satisfied if he'd be satisfied.
> (Poetry, p. 191)

A somewhat cumbersome rhyme scheme emphasizes the awkwardness of the grindstone (the earth, too, is shaped as an oblate spheroid) yet the poem, depending as it does upon the kinesthetic imagery of the grindstone, is indeed successful. The outrageous humor of this attack upon the Cartesian theory of the origin of matter is in part ironic. The grindstone is clearly on "all fours," and cannot even manage to get into the barn with the other farm machinery. And yet it (the theory) must have exerted a powerful influence upon the young boy's life.

That the "mighty world" must waste so much energy in the making of anything was a terrible fact, and later on a scientific fact, to Robert Frost.

Frost wrote a number of poems about the ax. The first one in the poems was made by Baptiste, a French-Canadian woodsman who wanted to keep his children at home for their education. His children should be schooled in the same manner that he carved an ax-handle, with the bend of the grain natural to them, in order to preserve their identities and strength for the later tasks of adult life. This is the matter at issue in the long narrative poem, "The Ax-Helve."

Although the awkward rendering of Baptiste's speech somewhat dates the poem, it shows a quality of neighborliness and concern for ethnic identity somewhat in advance of the present. It is coherent with Frost's plea for separate and distinct expressions of the human personality. But the story is Baptiste's, and he teaches the poet a lesson. The ax the poet has been using will not do, is not proper for the task of splitting wood.

> "Made on machine," he said, plowing the grain
> With a thick thumbnail to show how it ran
> Across the handle's long-drawn serpentine,
> Like the two strokes across a dollar sign.
> (Poetry, p. 186)

The handle would break easily because not carved along the wood grain, so while the poet visits, Baptiste carves a new ax handle:

> He showed me that the lines of a good helve
> Were native to the grain before the knife
> Expressed them, and its curves were no false curves
> Put on it from without.
> (Poetry, p. 187)

The "lines" are there in nature to begin with, the poet needs only to see where they are.

While Baptiste carves and talks, and the poet watches and listens, a subordinant motion figure appears. It is Mrs. Baptiste who describes, or makes a figure, of the motions of the earth in the solar system with her rocking chair.

> Mrs. Baptiste came in and rocked a chair
> That had as many motions as the world:
> One back and forward, in and out of shadow,
> That got her nowhere; one more gradual,
> Sideways, that would have run her on the stove
> In time, had she not realized her danger
> And caught herself up bodily, chair and all,
> And set herself back where she started from.
> (Poetry, pp. 186, 187)

She knows to stop before falling into the sun. But the unifying figure of the poem comes at the end when the good ax is presented to the poet. Baptiste had been talking about knowledge. He stands the ax up on the base of its helve:

> Erect, but not without its waves, as when
> The snake stood up for evil in the Garden--

And of Baptiste, in comparison with the ax itself, the poem says:

> steel-blue chin drawn down
> And in a little--a French touch in that.
> Baptiste drew back and squinted at it, pleased:
> "See how she's cock her head."
> (Poetry, p. 188)

The comparison of ax and body attitude of the man is a further indication of Frost's vision of the necessary unity of action between man, machine, and nature. Later, referring to the poem, Frost commented on the nature of art as he perceived it:

> You know the Canadian woodchoppers whittle their ax-handles, following the curve of the grain, and they're strong and beautiful. Art should follow lines in nature, like the grain of an ax-handle. False art puts curves on things that haven't any curves.[10]

It might be noted that "The Ax-Helve" appears just before "The Grindstone" in the 1923 volume, following Frost's tendency to group poems with similar symbolism.

The star-splitter telescope is a tool hopefully designed to increase man's knowledge, but as the story of Brad McLaughlin's risk-taking behavior unfolds, it becomes apparent that even the telescope will not reveal very much to him. A motion figure opens the poem: it is the movement of the constellation Orion, somewhat personified:

> "You know Orion always comes up sideways.
> Throwing a leg up over our fence of mountains.
> And rising on his hands, he looks in on me
> Busy outdoors by lantern-light . . .
> (Poetry, p. 176)

The landscape comes alive with other motion figures as "a gust flings a handful/Of waste leaves at my smoky lantern chimney," and further difficulties taunt Brad into changing his life style. His new job has definite hours, and he now has time for star-gazing. A motion figure of water (a good omen this time) toward the end of the poem foreshadows the poem's outcome.

> I recollect a night of broken clouds
> And underfoot snow melted down to ice,
> And melting further in the wind to mud.
> Bradford and I had out the telescope.
> We spread our two legs as we spread its three,
> Pointed our thoughts the way we pointed it,
> And standing at our leisure till the day broke,
> Said some of the best things we ever said.
> (Poetry, p. 179)

As a tool, the telescope ought to be of some use "if splitting stars/ 'Sa thing to be compared with splitting wood," the poet says. Wood is here symbolic for the material work, as it was in "The Ax-Helve."

Men may share an admiration for meaningful work done by other men. The gum gatherer has a solitary life most of the time, but in the poem named after his occupation the poet walks beside him, drawing energy from the man's easy pace.

> There overtook me and drew me in
> To his downhill, early-morning stride,
> And set me five miles on my road
> Better than if he had had me ride,
> A man with a swinging bag for load
> And half the bag wound round his hand.
> (Poetry, p. 140)

Just as a heavier planet will carry its smaller satelite planet along, the poet moves along with the man. The water symbol runs through the poem here and there as the two men walk beside an unspecified body of water.

It is soon discovered that the man comes from "higher up in the pass/Where the grist of the new-beginning brooks/Is blocks off the mountain mass." The man's work is to gather gum from the mountain spruce, and take it to market. The poet tells him that his

> is a pleasant life
> To set your breast to the bark of trees
> That all your days are dim beneath,
> And reaching up with a little knife,
> To loose the resin and take it down
> And bring it to market when you please.
> (Poetry, p. 141)

The knife, mentioned almost incidentally, is a tool used here in an original natural occupation. And, although the days of the gum

gatherer are "dim" he inspires the poet in a way that cannot be found in more brilliant intellectual companions. It is another instance of Frost's neighborliness, noted by an early critic: "His forward path lies through his everyday relations with the person who is nearest him, and through everyday labors."[11]

3. "Man's Ingenuity Was Good"

When work is institutionalized, there are likely to be problems. Frost's life of self employment as farmer and poet was essentially independent. But when still a boy, he had to work in several mills to earn a living. "A Lone Striker" describes this remembered experience. The motion figures in it ask what the "modern speed" contributes to the lives of the workers. The mill bell swings, and the mill itself is felt to shake, as inside wool dust floats in the air, and wool yarn spins from spool to spool while the deft fingers of the spinner keeps it from breaking.

> Among the harplike spread of strings.
> She caught the pieces end to end
> With a touch that never missed,
> Not so much tied them as made them blend.
> Man's ingenuity was good.
> He saw it plainly where he stood.
> Yet found it easy to resist.
> (Poetry, p. 274)

The boy leaves the mill, deciding that "He never would assume that he'd/Be any institution's need." As it was not his work, the poet went his way. If they needed him they'd know where to search.

But, unlike the boy, the men of the line gang move as one figure. "Here comes the line-gang pioneering by," the poet warns.

As they put up telephone poles and wires, they destroy much of the forest. Furthermore, they are a loud lot.

> They string an instrument against the sky
> Wherein words whether beaten-out or spoken
> Will run as hushed as when they were a thought.
> But in no hush they string it; they go past
> With shouts afar to pull the cable taut
> (Poetry, p. 141)

This image of stringing an instrument is remarkably similar to that of the spinner of wool thread in the mill poem. Ingenuity of mass-produced cloth and of mass media may be good, but the poet as he goes into his poems sees his path diverging in another direction. While industry goes pioneering ahead he will go back in history, back to the imagination and fancy of childhood, back to the earth's geological past, for the subject matter of his poems. He remembered his departure from the woolen mill as a significant departure for his poetry.

4. "Loosely Bound"

Because muscular activity is especially enjoyed by children, motion figures abound in the Frost poems which emphasize children. Three good examples are "Birches," 1916, "Wild Grapes," 1923, and "The Silken Tent," 1942. The first two from early volumes are long narratives, but the third is a sonnet. The central figure of "Birches" is a boy, of "Wild Grapes" a girl, and of "The Silken Tent," an adolescent girl. In "Birches" the trees bent down by ice storms are shown imagistically "like girls on hands and knees that throw their hair/ Before them over their heads to dry in the sun." (Poetry, p. 121)

Yet the most effective motion figure of the poem is the boy riding the trees down, who "always kept his poise/To the top branches, climbing carefully." (Poetry, p. 122) There is a sense of freedom seldom the same again in adulthood: "Then he flung outward feet first with a swish/Kicking his way down through the air to the ground." There is a Jamesean touch in the final lines.

> I'd like to go by climbing a birch tree,
> And climb black branches up a snow-white trunk
> Toward heaven . . .
> (Poetry, p. 122)

That the "toward" is italicised for emphasis brings to mind James' insistence upon "a feeling of toward," so to speak--a feeling state in the relational words or connectives. According to James, one might climb toward a belief whether or not the belief was true: toward any mountaintop, any goal whatever--it was the journey that counted.

In "Wild Grapes" a very young girl becomes the speaker of the poem. Too young for climbing trees, she is caught up into a tree her brother bends down for her. Up in the air, she is afraid to let go although hat and shoes drop off one by one. Her brother observes that now she knows how it must feel to be a bunch of grapes, and finally manages to bend the tree back down. The child says,

> the world came revolving back to me,
> I know I looked long at my curled-up fingers
> Before I straightened them and brushed the bark off.
> (Poetry, pp. 198, 199)

As in this passage, throughout the poem one feels the muscular tension in lines such as "My small wrists stretching till they showed the banjo strings." The kinesthetic figure of grasping and letting go is the

metaphor, probably, of the illness of Frost's younger sister, Jeannie, characterized by a terrible fear of parental loss, according to Frost's biographer, Lawrance Thompson.[12]

"The Silken Tent" is a single sentence and a single metaphor of a young girl on the verge of womanhood. I quote it fully here because it seems to me one of Frost's finest accomplishments.

> She is as in a field a silken tent
> At midday when a sunny summer breeze
> Has dried the dew and all its ropes relent,
> So that in guys it gently sways at ease,
> And its supporting cedar pole,
> That is its pinnacle to heavenward
> And signifies the sureness of the soul,
> Seems to owe naught to any single cord
> But strictly held by none, is loosely bound
> By countless silken ties of love and thought
> To everything on earth the compass round,
> And only by one's going slightly taut
> In the capriciousness of summer air
> Is of the slightest bondage made aware.
> (Poetry, pp. 331, 332)

In the adult world of work the bonds are similar. "Men work together" had the elusive meaning that the pervasive laws of nature are always at work in and around us in the same way. The material world is everywhere subject to the same physical laws, to the same statistical random count of quantum mechanics. As physicist David Bohm explains this universal unity:

> Quantum concepts imply that the world acts like a single indivisible unit, in which even the "intrinsic" nature of each part (wave or particle) depends to some degree on its relationship to its surroundings.[13]

And that is what is going on in "The Silken Tent" as poem and as metaphor. The world, just as the girl, is "in a field:" bound by countless ties. The tent figure is symbolic for our relationship to nature's

larger design. One of the reasons for the sense of magnificence we experience from this poem is that, like the girl, we are on a threshold of knowledge, and have only had glimpses of, or experienced the slight tug of, that curious bondage.

Notes to Chapter Four

1. William James, Psychology: The Briefer Course, ed. Gordon Allport (New York: Harper & Row, 1960), Intro., pp xiii-xxiii. Varieties of Religious Experience is noted here p. 53, n. 23.

2. James, Psychology: The Briefer Course, p. 237.

3. James, Psychology: The Briefer Course, p. 29.

4. J. Dennis Huston, "'The Wonder of Unexpected Supply:' Robert Frost and a Poetry Beyond Confusion," The Centennial Review, 13:3 (1969), p. 322. "The importance of the demonic is predominantly metaphorical: it provides man with a way of describing the energy that his imagination imparts to the world."

5. Henri Bergson, Laughter (1911; rpt. New York, Macmillan, 1924) auth. trans. Cloudesley Brereton and Fred Rothwell. "Movements," pp. 29-36.

6. Quoted in Donald Bartlett, "Two Recollections of Frost," The Southern Review, 2:4, New series (1966), p. 845.

7. Howard Mumford Jones, "The Cosmic Loneliness of Robert Frost," in Belief and Disbelief in American Literature by Howard Mumford Jones (Chicago: U. of Chicago Press, 1967), p. 142.

8. Letter from Norman Holmes Pearson, Dec. 23, 1974 to the author. "He [Frost] certainly paid attention to science, and when I edited the Oxford Anthology of American Literature, he was anxious to have me include 'The Grindstone.'" Pearson also mentions Simon Newcomb, an American-Canadian mathematician astronomer who wrote popular astronomy essays and maintained that heavy materials would not fly. Newcomb constructed planetary tables and was an authority on the moon's motion.

9. Sir William Herschel 1738-1822, astronomer, constructed his own telescopes, mapped the skies, discovered Uranus, concluding that the whole solar system moves in space. His son Sir John Herschel 1792-1871 was first to measure the bright stars with precision. He wrote a translation of the Illiad and is buried in Westminster Abbey. Sir William was known as an unusual perfectionist in the grinding of his own telescope lenses, and so was his sister, Caroline, who was the first woman astronomer. By Herschel, Frost may have meant either Caroline or Sir William because of their nearly eccentric trait of lens grinding. The grindstone theory, itself however, trails its way from Descartes through Newcomb, not from Newton through the Herschels.

10. Quoted in The Public Ledger, Phila., Apr. 4, 1916, Rpt. in Interviews with Robert Frost, ed. Edward Connery Lathem (New York: Holt, 1966), p. 19. Designated Interviews hereafter.

11. G. R. Elliot, "The Neighborliness of Robert Frost," The Nation, 109, (Dec. 6, 1919), p. 713.

12. Letter from Jeannie Frost to Robert Frost, c. Sept. 1925, Selected Letters, 318-322, and Thompson's notations.

13. David Bohm, Quantum Theory (Englewood Cliffs, N. J.: Prentice Hall, 1951), p. 14.

FIVE. Motion in the Poems: Earth

1. "To Earthward"

Frost liked combining an ancient concept like the four elements of earth, air, fire, and water with modern ideas. The poems refer often to one or to a combination of the traditional elements, at times treated as metaphorical symbols. Water, as we have already seen, is important in Frost's poetry, easily lending itself to various analogues. It appears as a motion figure, changing its rate of speed, and in other ways revealing the mercurial nature of the imagination as well as the fluidity of matter. In later chapters we will consider the imagery of fire and air, but the second most frequently treated element in Frost's poems is earth. Within this element are included all the creatures of earth in addition to man, as well as rocks, soil, mountains, and other geological phenomena. Categories of flora and fauna found in the poems are animals, insects, birds, flowers, leaves,

and trees. They often appear symbolically in these groupings, perhaps showing a characteristic of the organism itself, or representing some human characteristic in either a satiric or a tragic mode. Each figure within the poem shows Frost's close attention to the organism's movement. One gets a sense of the scientist's close observations, especially in the loving attention Frost gives to wild flowers and in his close scrutiny of insect behavior.

The contours of and the behavior of the earth's crust receives much attention in Frost's poems. There are numerous references to geological and archeological events: avalanches, glacial effects, artifacts found in caves, rock fissures, and shoreline changes. We have noted the glacial effect in "Directive" that added to the poem's somber tone. Frost plainly loved the earth. His expression toward the soil itself is passionate, reminding one of passages in the novels of D. H. Lawrence and of the symbolic paintings of Gauguin and VanGogh.

> When stiff and sore and scarred,
> I take away my hand
> From leaning on it hard
> In grass and sand.
>
> The hurt is not enough:
> I long for weight and strength
> To feel the earth as rough
> To all my length.
> (Poetry, p. 227)

To those who find Frost's poems mere abstract philosophical wisdom, I would recommend this poem, "To Earthward," with all its sensual earth and flower imagery: rose petals stinging--the swirl and ache of honeysuckle sprays.

2. "A Great Wave From It"

An almost primitive atavistic feeling appears in a number of poems about wild and domestic animals. Two of the best of these poems are "Two Look at Two" (1928), and "The Draft Horse," (1962). It is interesting to compare the two because the first shows a young couple, together in the woods, in a happy experience of discovering wild deer. The second presents an elderly couple who witness the unprovoked murder of their horse by a man who comes out of a nearby woods and returns to it. In the first, young married lovers are walking up a mountain. They might have gone farther, but it is getting late and the way back is dangerous. When they come to an old stone fence they are reminded of the time, and the danger.

> They stood facing this,
> Spending what onward impulse they still had
> In one last look the way they must not go,
> On up the failing path, where, if a stone
> Or earthslide moved at night, it moved itself;
> No footstep moved it. "This is all," they sighed,
> Good-night to woods.
>
> (Poetry, p. 229)

There is an attitude of expectant mystery from the mention of earth moving around by itself, although such soil movements are not in any way supernatural. Such movements in nature, however, are not easily perceived.

The two have climbed almost too far because their love has made them forget how late it is. As they stand at the old wall, a doe looks directly at them. "She saw them in their field, they her in hers," suggests two differing dimensions of perception. The doe

sighs and moves on. Soon a buck deer arrives around the same spruce tree. He lifts his head

> As if to ask, "Why don't you make some motion?
> Or give some sign of life? Because you can't.
> I doubt if you're as living as you look."
> (Poetry, p. 230)

The response the deer expects is motion. Since the couple makes no move, the deer are neither frightened nor attracted, and simply move away. But the couple could not move, they were under a spell.

> Still they stood,
> A great wave from it going over them,
> As if the earth in one unlooked-for favor
> Had made them certain earth returned their love.

Love of the earth, then, is returned, but obliquely and at times when it is not expected. The animals of the poems are earth's messengers; here they simply acknowledge the couple's presence. But, the animals' presence and inquiring looks makes "a great wave" go over them. Like radio or radar or light waves, it is a non-verbal message. The indefinite "it" of the poem is especially effective, and appears again in a poem on the same subject, "The Most of It," in which a woodsman is confronted with a buck deer in the same manner.

"The Draft Horse" tells in ballad form that two people are riding at night in a cart behind a farm horse. A man comes suddenly out of "the trees" and stabs the horse dead. Then the action of the horse falling is followed by a terrible motion of "the night" as it seems to draw breath through the trees where the man had come from.

> The ponderous beast went down
> With a crack of a broken shaft.
> And the night drew through the trees
> In one long invidious draft.
> (Poetry, p. 444)

It is as if something in "the night" of nature had envied the couple their draft horse, and had wanted them to walk the rest of the way home, the poem tells us. The incident, supported by the motion figures of the heavy falling horse, the wind drawn through the trees as breath is sucked in by the jealous villain, and the couple walking home, is surely metaphorical for the existence of evil in the universe. It is no wonder a drumlin woodchuck needs to be thorough about his crevice and burrow.

3. "The Touch of Thy Dye-Dusty Wing"

When Frost compares fireflies to stars the moral is that although small insects may emulate stars, "they can't sustain the part." In a number of poems such as that one, insects provide light entertainment and an opportunity for Frost to present some of his beliefs. In "A Considerable Speck," for instance, he states outright in a comic tone that the movements of a mite across a page are mind itself:

> It paused as with suspicion of my pen,
> And then came racing wildly on again
> To where my manuscript was not yet dry;
> Then paused again and either drank or smelt--
> With loathing, for again it turned to fly.
> Plainly with an intelligence I dealt.
> (Poetry, p. 357)

One may imagine William James enjoying that bit of satiric fancifulness. But "Departmental," about ants doing their assigned jobs; "Waspish," about egotistical antics; and other such light poems should not lead the reader to think that none of Frost's insect figures is to be taken seriously. His first nationally-published poem, "My Butterfly," (1894-1913) is elegiac, as is the much later "To a Moth Seen in Winter,"

and the two may be interestingly compared. Both poems were written for the poet's wife.

In "My Butterfly" two phrases in typically Frost diction are "Its two banks have not shut upon the river," and "For thou art dead, I said,/And the strange birds say," despite archaisms. A Shelleyan rapture of the power of nature calls out the motion figures:

> Surging, the grasses dizzied me of thought,
> The breeze three odors brought,
> And a gem-flower waved in a wand!
> (Poetry, p. 29)

The poet's first sight of the butterfly is described by its motion which is later contrasted with the stillness of the butterfly wing found with "the withered leaves/Under the eaves." It makes its entrance.

> In airy dalliance,
> Precipitate in love,
> Tossed, tangled, whirled and whirled above,
> Like a limp rose-wreath in a fairy dance.
> (Poetry, p. 28)

The fragility of young love that had moved the poet with the "touch of thy dye-dusty wing" suggested later the touch of despair in autumn leaves, and still later the winter moth alighting on his hand, then flying to its death in snow.

It is "that old incurable untimeliness,/Only begetter of all the ills that are" that makes the gap of communication between poet and moth so great. He is not able to help the moth. It has its time and fate, just as the poet has his.

> Go till you wet your pinions and are quenched.
> You must be made more simply wise than I
> To know the hand I stretch impulsively
> Across the gulf of well-nigh everything
> May reach you, but cannot touch your fate.
> (Poetry, pp. 356, 357)

This somber poem will suggest yet another earlier butterfly poem to the Frost reader, "Blue-Butterfly Day" (1923) in which migrating butterflies have stopped to rest:

> But these are flowers that fly and all but sing:
> And now from having ridden out desire
> They lie closed over in the wind and cling
> Where wheels have freshly sliced the April mire.
> (Poetry, p. 225)

The closeness of these winged insects to the earth is again emphasized by the motion imagery. Wheelruts seem to underline the poem's point. Frost's butterflies and moths dance perilously and heroically above their common destiny. His comic insects, mock-heroic, reveal the human scene.

4. "A Mid-Wood Bird"

A metaphor of birds in "Our Singing Strength" is strikingly close to that of Frost's butterflies.

> The road had become a channel of running flocks
> Of glossy birds like ripples over rocks.
> I drove them underfoot in bits of flight
> That kept the ground, almost disputing right
> Of way with me from apathy of wing,
> A talking twitter all they had to sing.
> (Poetry, p. 240)

The birds become a brook channel of the earth when they are tired. These weary birds' talking twitter brings to mind one of Frost's most famous birds, "The Oven Bird," often taken to represent the poet's own peculiar voice. His song is described as loud and resonant: "He makes the solid tree trunks sound again." His is not an especially pleasant tune to hear, he is "Loud, a mid-summer and a mid-wood bird." What he says suggests what the song might sound like:

He says that leaves are old and that for flowers
Mid-summer is to spring as one to ten.
He says the early petal-fall is past,
When pear and cherry bloom went down in showers
On sunny days a moment overcast;
And comes that other fall we name the fall.
He says the highway dust is over all.
(Poetry, pp. 119, 120)

Remembering the showers of blossoms in spring reminds the bird of dust settling on the highway--a melancholy association, probably expressed in a quarrelsome, rasping, tuneless tone. As one writer noted, the bird can "frame questions about the nature of things, even to quarrel with a world that is not nearer to the heart's desire. He can sing without singing; he can protest with earnestness and verve the passing of things."[1] But it would be misleading to say that any one bird represents Frost's voice more than another. In earlier poems birds had joyous songs, associated with young love. In the later "Acceptance" the birds sing or say very little.

Moreover, one might compare "The Valley's Singing Day" with the later "Never Again Would Birds' Song Be the Same," as we have compared butterfly with moth, deer with draft horse. In the first poem, the poet is still asleep when "You had awakened under the morning star/The first songbird that awakened all the rest." (Poetry, p. 235) The dawn had begun to free the "pent-up music of overnight," and the poet says that "you" had started the "valley's singing day." If the poet takes his inspiration from the birds, they take theirs from "you." But in "Never Again Would Birds' Song Be the Same," the poet says that he imagined he heard in the birds' voices "her tone of meaning but without the words," and that "only an eloquence so soft" could have any effect upon birds.

> Moreover her voice upon their voices crossed
> Had now persisted in the woods so long
> That probably it never would be lost.
> (Poetry, p. 339)

What starts the birdsong in the first poem and what modified the birdsong in the second was the "daylong voice of Eve." We may be certain Frost intended both poems as tributes to his wife. If we may take birds to be symbolic of the lyric voice, Frost gives credit for the tone of his poetry to Elinor Frost, and to her for its early impetus as well.[2]

Another turn to the puzzle of what nature says to man is given in two more bird metaphors: one of phoebes nesting in an abandoned barn in spring, and another of a bird singing a tune in its sleep. In "The Need for Being Versed in Country Things," although a deserted farm is described, motion figures abound. The chimney of the house is pictured as "a pistil after the petals go." The barn might have burned "had it been the will of the wind:" it no longer let in teams of horses with "scurrying hoofs," nor did the wagon "brush the mow with the summer load." Phoebes are flying in and out of the barn windows now, performing their spring task of nesting. The farm is very much alive for them.

> Yet for them the lilac renewed its leaf,
> And the aged elm, though touched with fire;
> And the dry pump flung up an awkward arm;
> And the fence post carried a strand of wire.
>
> For them there was really nothing sad.
> (Poetry p. 242)

Again, the tree "touched with fire" suggests thermodynamical decay. But in the midst of the scene of loss the birds perform their seasonal activities--for them it is a beginning. It is spring.

A poem with reference to the effects of evolution is "On a Bird Singing in Its Sleep." The poem follows "Design" in the 1936 volume. The design of nature has conditioned the behavior of the bird over the centuries, the poet muses. The bird sings, in the middle of the night "his little inborn tune." He sings only once, and from a low bush; he sings a brief tune, and not an innovative one, either--his tune is "ventriloquist." Yet,

> It could not have come down to us so far,
> Through the interstices of things ajar
> On the long bead chain of repeated birth,
> To be a bird while we are men on earth,
> If singing out of sleep and dream that way
> Had made it much more easily a prey.
> (Poetry, pp. 302, 303)

A combination of the bird's wisdom of modesty, then, along with some possible luck in its travel through the interstices of material repeated birth, has let the small song survive. There is something in nature's design that has protected the increment of song.

5. "Every Kind of Bloom"

Flowers are not less frequent than animals, insects, birds or trees: they are probably the most frequent and varied natural forms in Frost's poems. They are abundant early in the poems and extend throughout, and their symbolism is complex. As Frost wrote in A Boy's Will:

> The fed had every kind of bloom,
> And for every kind there was a face,
> And a voice that has sounded in my room
> Across the sill from the outer gloom.
> ("In a Vale," Poetry, p. 15)

Probably "The Tuft of Flowers" and "Putting in the Seed" will be sufficient examples to show the close association of flowers with the earth, their curious communicating power, and the vulnerable joy they symbolize in the poems.

"The Tuft of Flowers" happened to secure Frost his first teaching position, he later told a critic:

> Mr. Merriam said if I would read a poem to his Men's League banquet it might prove all that was needed to win me a place on the Pinkerton faculty. I told him I would never dare read in public, but I would give him a poem to read and sit beside him when he stood up to read it. The poem was A Tuft of Flowers, that sounds as if it might have been composed on purpose for such a fraternal occasion. It wasn't, but it happened to fit. It was a success and started me off on my more serious teacher's life.[3]

The famous lines of the poem, "'Men work together,' I told him from the heart/'Whether they work together or apart'" indeed had more significance for Frost than the mens' league's purposes. The "leaping tongue of bloom" spared by the scythe has much similarity of meaning to the song of the bird singing in its sleep. The tongue of bloom is the true speaker of the poem, and is synechcoctal for lyric voice, or perhaps for poets. It speaks first to the mower who spares it, and then to the hay maker poet who notices its survival. Because men follow the design, the laws of nature, and those laws operate in them as well, they necessarily work together. Sparing the tongue of bloom is part of nature's plan. While Mr. Merriam read the poem, Frost sat as quietly as a tuft of flowers. Fortunately, his employment allowed him to go on writing in his germinal poetic period at Derry farm while teaching Jamsean psychology and other things at the Pinkerton Academy nearby.

"Putting in the Seed" shows something of the joy and closeness to the earth communicated by flowers. A less-known, but fine sonnet, it moves steadily toward a motion figure of emotional affect. The poet declares that he has

> a springtime passion for the earth.
> How love burns through the Putting in the Seed
> On through the watching for that early birth
> When, just as the soil tarnishes with weed,
> The sturdy seedling with arched body comes
> Shouldering its way and shedding the earth crumbs.
> (Poetry, p. 124)

As in this figure, flowers are often shown to be extraordinarily active. For instance, in "The Flower Boat" their magic sets the retired fisherman's boat rocking again:

> At anchor she rides the sunny sod.
> As full to the gunnel of flowers growing
> As ever she turned her home with cod
> From Georges Bank when winds were blowing.
> (Poetry, p. 262)

The "Elysian freight" of the boat allows Frost to express his atavistic delight in investing an inanimate object with movement, a delight founded in the fact of physical science that everything is moving in its own way although we cannot always see the motion.

6. "Leaves Are All My Darker Mood"

In contrast to the joyous symbolism of the flowers, leaves are usually associated with dark portents, with sadness, autumn, and death. They are often ominous, as in "A Leaf-Treader."

> All summer long they were overhead, more lifted up than I.
> To come to their final places in earth they had to pass me by.
> All summer long I thought I heard them threatening under their breath.
> And when they came it seemed with a will to carry me with them to death.
> (Poetry, p. 297)

And in one poem Frost contrasts flowers and with leaves explicitly. He tells us that his interest is no longer in flowers, but in leaves, that "leaves and bark may be tree enough."

> Leaves and bark, leaves and bark,
> To lean against and hear in the dark.
> Petals I may have once pursued.
> Leaves are all my darker mood.
> (Poetry, p. 297)

The somber tone is similar to the two poems on either side of it in the 1936 volume of poems, "A Leaf-Treader" and "Desert Places."

But the most somber fact of all about the leaves is that they will lose their colors, becoming the same indistinct color, and will no longer have their individual shapes as they take on the shape and hue of the earth. The metaphor describes again the final thermodynamical equilibrium, or a prelude to it. In groves of hardwood trees

> They fall from giving shade above,
> To make one texture of faded brown
> And fit the earth like a leather glove.
> (Poetry, pp. 25, 26)

Having lost their distinct and separate forms, the leaves no longer have movement of their own and have become one with the earth.

7. "Those Dark Trees"

Of his early poem, "The Demiurge's Laugh," Frost glossed in the first edition of A Boy's Will that it was "about science." In Greek, demiurge means the maker of the world in Platonic philosophy, and a subordinant creator, associated with the creation of evil in the Gnostic sense. The first line has the phrase "far in the sameness of the wood," undoubtedly referring to Frost's preference for distinct

and separate trees over the woods' sameness. The demiurge of the poem laughs as if he "utterly doesn't care," and the poem ends with the otherwise cryptic conclusion: "Thereafter I sat me against a tree." Did the poet see something in science, a tendency toward abstract depersonalization ultimately dangerous to life, a "sameness," that he wished to criticise? I think so, if we grant that the sameness and depersonalization may be found in other areas of human activity as well.

Trees and woods represent the strange material world, and also sometimes the unconscious mind, grounded in the material world in the psychologies of William James and Carl G. Jung and others. What the woods and trees mean in the poems is harder to sort out than the other natural symbols, therefore. They say something about motion too, of course. The tree that expresses "outer weather" in "Tree at My Window" is "taken and tossed:" the swaying trees in "The Sound of Trees" make the poet's head sway to his shoulder and his feet tug at the floor. In the very last poem of the last book, Frost takes action against a particular tree, probably a symbolic act.

> In winter in the woods alone
> Against the trees I go.
> I mark a maple for my own
> And lay the maple low.
> (Poetry, p. 470)

The poem draws the conclusion that nature is not defeated by the felling of one tree, nor is the poet defeated by "yet another blow." Sometimes, then, the trees or woods represent enemies (suggested by Macbeth?)--a possible encroaching danger.

Trees as metaphorical for the material of nature appear in both "The Wood-Pile" and in the woodchopping scene of "Two Tramps in

Mud-Time." But who can say exactly what is represented by "those dark trees" in the first poem of A Boy's Will--"Into My Own,"

> One of my wishes is that those dark trees,
> So old and firm they scarcely show the breeze
> Were not, as 'twere, the merest mask of gloom,
> But stretched away unto the edge of doom.
> (Poetry, p. 5)

And the same suggestive but indefinite quality haunts the yellow wood of "The Road Not Taken," the snow-filled woods of "Stopping by Woods on a Snowy Evening," and the "pillared dark" of "Come In." The poet does not enter the woods because he was not actually invited, and because he was "out for stars." (Poetry, p. 334)

> Far in the pillared dark
> Thrush music went--
> Almost like a call to come in
> To the dark and lament.
> (Poetry, p. 334)

Trees may be ominous, too, because of their relative relation to time. Man's life is usually shorter than the trees' lives, so that they stand in a memorial monumental (pillared) relation to man. Nature has its ominous aspect because the material world is entropic--to go into the woods, into the spirit of the material world is analogous to entering a state of gloom or grief. The poet did not go into the snowy woods because he had promises to keep, he did not go into the woods of "Come In" partly because he had not been invited, and partly because the thrush music seemed an invitation to the dark and to grieving. Psychological and physical levels of the symbolism are both involved in Frost's woods.

At the Derry farm where Frost early worked out much of this symbolism, the children were being educated at home by their parents

who were both licensed as schoolteachers. Lesley Frost remembers the manner of that education. While her mother taught the "organized" subjects, her father "took on botany and astronomy."[4] The farm was a learning laboratory where the children became acquainted with the field and wood flowers, and with the stars, "naming the constellations at all hours of the night." Flowers were found and transplanted nearer to the house. It was a relatively happy time for the young family. But the song of the oven bird was heard from the center of the dark woods, and beyond the farm was the highway where the slow wheel poured the sand.

Notes to Chapter Five

1. William R. Osborne, "Frost's !The Oven Bird,'" The Explicator 26:6 (Feb., 1968), item 47.

2. Poetry, 338, 339. "Never Again Would Birds' Song Be the Same." See letter to Louis Untermeyer, 4 Oct., 1937 in Selected Letters, p. 450: "She has been the unspoken half of everything I ever wrote and both halves of many a thing from My November Guest down to the last two stanzas of Two Tramps in Mud Time--as you may have divined."

3. Letter to Robert Chase, 4 Mar., 1952 in Selected Letters, p. 551.

4. Lesley Frost, "Robert Frost Remembered," The American Way (Mar., 1974), p. 15.

SIX. Motion in the Poems: Fire and Air

1. "Seeds of Fire"

In Robert Frost's essay "Education by Poetry," which was first a talk to students at Amherst College, he made some interesting references to the four traditional elements, in the manner of his "kind of fooling." (Poetry, p. 470)

> Once on a time all the Greeks were busy telling each other what the ALL was--or was like unto. All was three elements; air, earth, and water (we once thought it was ninety elements; now we think it is only one).[1]

No student attempted to correct Frost that there were thought to be four elements instead of three, pointing out as one could have, that the predominance of the Greek myth of Prometheus, the fire bringer, would surely indicate fire should be included in the Greek four. Therefore Frost was free to present a further hint about fire by way of a metaphor from Homer's Odyssey.

> There is a better metaphor in the same book. In the end Odysseus comes ashore and crawls up the beach to spend the night under a double olive tree, and it says, as in a lonely farmhouse where it is hard to start the fire again if it goes out they cover the seeds with ashes to preserve it for the night, so Odysseus covered himself with the leaves around him and went to sleep. There you have something that gives you character, something of Odysseus himself. "Seeds of fire." So Odysseus covered the seeds of fire in himself. You get the greatness of his nature.[2]

Frost's coy inexactitude in naming the "three" ancient elements prepared the way for someone to notice the fourth. But here he is also playing with the idea of inexactitude. Metaphor was not the same thing as exactitude.[3] That is, modern metaphorical symbolism carries volatile suggestion but cannot be counted on to fit into a closed logical system as systematic philosophical symbolism may have done in the past. Every close reader of poetry knows that it is next to impossible, for instance, to fully understand the poet's original intention--and yet that is what we attempt to know.

In Frost's poems some of the motions of fire are visible, as in "The Bonfire," and some are invisible, as in the thermodynamically decaying woodpile. As have the other elements, fire has many forms. It is warmth, heat, smoke, flame, and sparks. It is the stars, strangely but closely associated with flowers. It moves much faster than any of the other elements, can be more rapidly destructive, and is therefore more fearsome. In "The Bonfire" the poet discusses these characteristics of fire with his children.

> 'Oh, let's go up the hill and scare ourselves,
> As reckless as the best of them tonight,
> By setting fire to all the brush we piled
> With pitchy hands to wait for rain or snow.
> Oh, let's not wait for rain to make it safe.'
> (Poetry, p. 129)

This long narrative has a story within a story as well. The children are surprised that fire could scare their father, so he tells them a story of how he once burned a field and the fire almost got away. The story includes information about how to put out a fire, and many motion figures of the dangerous fire such as:

> 'and before it burns out
> It will have roared first and mixed sparks with stars,
> And sweeping round it with a flaming sword,
> Made the dim trees stand back. . .'
>
> (Poetry, p. 130)

He tells them there would be good reason for him to be scared, alluding to Joan of Arc and heretics and witches going up in flames. In the manner of ghost story telling the poet says:

> 'Why wouldn't it scare me to have a fire
> Begin in smudge with ropey smoke, and know
> That still, if I repent, I may recall it,
> But in a moment not: a little spurt
> Of burning fatness, and then nothing but
> The fire itself can put it out, and that
> By burning out. . .'
>
> (Poetry, p. 130)

Fire is certainly universally feared by animals, and is a symbol of fear, of how to cope with fear, in the poem. In an unusual italicized line, the poet tells the children:

> 'War is for everyone, for children too.
> I wasn't going to tell you and I mustn't.
> The best way is to come uphill with me
> And have our fire and laugh and be afraid.'
>
> (Poetry, p. 133)

"The Bonfire," therefore, may be thought of as a post-World War I poem (1916). Later, shorter, but far more frightening figures of fire are combined with other images in post-World War II poems such as "Our Doom

to Bloom," and "Bursting Rapture" which followed science's discovery of atomic power.

In "Evening in a Sugar Orchard," (1923) however, there is nothing frightening about the carefully tended fire. There is no risk of fire; the poet's attitude is calm, contemplative. And yet, the poet wants the fireman in the sugarhouse to "give the fire another stoke" to see the lively sparks fly up, making a figure against the evening sky.

> The sparks made no attempt to be the moon.
> They were content to figure in the trees
> As Leo, Orion, and the Pleiades.
> And that was what the boughs were full of soon.
> (Poetry, p. 234)

The poem says that like the constellations we visualize in the sky, any natural phenomena are seen as configurations by man. This esthetic "figuring" is our clue to nature's actual designs, our bridge into the physical quantum world. The sparks (of the imagination?) are not the moon itself, they are not the stars, but they introduce the stars to us.

In his metaphoric thought in the poems, Frost is always keenly aware of the relation of one symbol to another based in nature's ecological dependencies. For instance, the closeness of entropic burning to flowers is given in the figure of the parasitic clematis vine that binds the decaying woodpile. When a field is burned, it is freed for the wildflowers, the fireweed for instance, to spring up without having to share space with grasses or crops. In "A Star in a Stoneboat" we find,

> from having been star-shot
> The very nature of the soil was hot
> And burning to yield flowers instead of grain,
> Flowers fanned and not put out by all the rain
> Poured on them by his prayers in vain.
> (Poetry, p. 173)

The flowers, the next wildest thing to fire in their motions in the poems, move across the burning soil. Not even the wind and rain will put them out.

"Fire and Ice" by its title points rather obviously to Frost's schema of the four elements. Although the poem discusses an either-or argument as to whether the world will end in one way or the other, the title is "Fire and Ice," not fire or ice. Here Frost takes astronomical speculations into the emotional realm again: fire is equated with desire, and ice with hate. "Ice" happens to conveniently and ironically rhyme with "twice," and "suffice." Extremes of heat and cold are equally destructive in the galaxy and in people, the poem says.

> From what I've tasted of desire
> I hold with those who favor fire.
> But if I had to perish twice,
> I think I know enough of hate
> To say that for destruction ice
> Is also great
> And would suffice.
> (Poetry, p. 220)

As Lawrance Thompson pointed out in his pilot study Fire and Ice, Frost often presents revelations through ironic balance, using opposites importantly in this difficult procedure. Irony radiates from the middle line of this poem, "But if I had to perish twice," and of course the alternatives of either the earth cooling down into another ice age, or colliding with the sun, is scarcely relevant to either poet or audience who will perish long before either of these eventualities. Perhaps it is also suggested that in former ages men imitated the elements in expressing their feelings, to a degree.

In "Take Something Like a Star" we find Frost's favorite star, Sirius, symbolic for the stoical sense of balance he admires. The poet questions it. What is its language, if any?

> Say something! And it says, 'I burn.'
> But say with what degree of heat.
> Talk Farenheit, talk Centigrade.
> Use language we can comprehend.
> Tell us what elements you blend.
> It gives us strangely little aid,
> But does tell us something in the end.
> (Poetry, p. 403)

Although the star has not said anything except that it burns, the fact of its position and motion in the sky communicates an attitude to the poet. The star's motion is steady; it keeps in its own orbit. A man should not be swayed from his own chosen path by "praise or blame" or anything else too far in one direction or another from his course.

2. "Make It Flow"

The element or air is not only shown as wind and breezes, but sometimes as mixtures like smoke and mist as in "A Cabin in the Clearing" (1962) and in "Atmosphere," (1928) subtitled "Inscription for a Garden Wall." In the latter poem, all elements participate to enhance the air, to synthesize it into a natural combination.

> Winds blow the open grassy places bleak
> But where this old wall burns a sunny cheek,
> They eddy over it too toppling weak
> To blow the earth or anything self-clear;
> Moisture and color and odor thicken here.
> (Poetry, p. 246)

And in a light verse poem air becomes vapor or gas, representing spiritual uplift. "Innate Helium" says, "Religious faith is a most filling vapor." Then the motion figures explain:

> It swirls occluded in us under tight
> Compression to uplift us out of weight--
> As in those buoyant bird bones thin as paper,
> To give them still more buoyancy in flight.
> (Poetry, pp. 386, 387)

It is possible that Frost also had the test balloons of Robert Millikan in mind here. Millikan believed that his detection of cosmic rays from outer space had some bearing upon religious faith because they might indicate that the universe was being created from beyond its immediate range. However that may be related, the poem's figure of hollow bird bones is one precise result of Frost's interest in flight dynamics, and presents the feeling of spiritual buoyancy he is, in part, satirizing.

A spring wind is addressed in "To the Thawing Wind." It is a southwest wind, and the poet asks it to melt the snow and steam the snowbank during the day.

> But whate'er you do tonight,
> Bathe my window, make it flow,
> Melt it as the ice will go;
> Melt the glass and leave the sticks
> Like a hermit's crucifix;
> Burst into my narrow stall. . .
> (Poetry, p. 11)

The wind is invited to blow the picture from the wall, scatter poems, and whisk the poet outdoors into nature at night, and is symbolic of that flow of nature Frost wants most in his poems. The rigid window-glass must melt in order to move with the flow.

As in Lucretius' poem, Frost has made all the elements of nature flow, and has brought this vision of reality into the most intimate love lyric:

All song of the woods is crushed like some
Wild, easily shattered rose.
Come, be my love in the wet woods, come,
Where the boughs rain when it blows.
(Poetry, p. 26)

The obvious intimate Freudian symbolism of this passage in "A Line-Storm Song" may not be attributed to an influence of Freud upon Frost, but to Frost's intuitive perception of the power of such symbols of passionate love. It is, I think, especially interesting to notice that the wild rose is shattered, the woods are wet, and the boughs rain under the influence of the wind. It is the motion of the storm figure in which the rose, the trees and the boughs appear and have their principal effectiveness. "To the Thawing Wind," however, shows that the same attitude of movement exists in the poet's relation to nature. The glass is melted so that the poet's vision may move with the movements of the thawing wind.

Notes to Chapter Six

1. "Education by Poetry," Selected Prose, p. 37.
2. "Education by Poetry," Selected Prose, p. 42.
3. "Education by Poetry," Selected Prose, p. 35.
4. Thompson, Fire and Ice, p. 170.

SEVEN. The Moving Lens

1. "I Cannot Rub the Strangeness From My Sight"

The total structure of Frost's poems (the meaning, form, and esthetic intention of the poet which includes his donnée in the standard Richardian definition of structure), shows, I think, that the largest implicit shaping metaphor of the poems is motion itself. There are, moreover, many subordinant metaphors of motion to be found within the larger one which are part of it and support it. Attitudes resulting from Frost's interest in motion are of utmost importance to the poems' structure. One attitude that Frost held in the poems was that nature is indeed strange, that it seems strange to us. It is impossible to be exact about nature, as we might like to be, first because there is not much one can know, and second and specifically, the physical law of indeterminancy rules that we cannot even locate a particle in space and time with certainty. This uncertain character that nature has,

from our point of view, makes it seem universally strange. Werner Heisenberg formulated the uncertainty or indeterminancy (science like the rest of us often has several terms for the same phenomenon) principle in physics in 1927, and it was immediately established, although not without initial objection from Einstein which was refuted by Niels Bohr and others.

Speaking to students at Amherst in the fall of 1930, Frost explained the uncertainty principle in science in relation to metaphor:

> The other day we had a visitor here, a noted scientist, whose latest word to the world has been that the more accurately you know where a thing is, the less accurately you are able to state how fast it is moving. You can see why that would be so. . . . In carrying numbers into the realm of space and at the same time into the realm of time you are mixing metaphors, that is all, and you are in trouble.[1]

Frost is equating metaphor with dimensions or reference frames, an interesting comparison which has to do with his objection to the idea of exactitude. In his own teaching, he told the Amherst group, he graded a student on the "closeness" he may have come to understanding, say, Keats: "I think a man might make twenty fool remarks if he made one good one some time in the year. His mark would depend on that good mark."

Frost felt strongly about the probable awkwardness involved in the search for knowledge, and was especially annoyed by a pretense of knowledge in academic circles. He considered the popular myth that science was exact especially bothersome. Later, he told a friend,

> I was talking to a college president the other day, and I inquired, "What is the difference between science and poetry?" 'In the first place,' the college president replied, 'science is exact.' 'If that's what you're going to say about it, I'll go home.'[2]

Frost's retort contains more than the humor of situation. He saw science at its best as a great adventure that had nothing to do with popular clichés. As late as 1961 he told an interviewer that he was very much interested in science: "I like anything that penetrates the mysteries. And if it penetrates straight to hell, then that's all right, too."[3] Evidently the poet's rebellious attitude in defense of knowledge of nature stayed with him to the last. What he had learned in his own educational struggle with schools (which always had reference to his mother's struggle to survive in the communities in which she taught) colored his quarrel against conformism and pointed him toward an adventurous attitude toward knowledge. The first was static; the second moved more naturally with life.

The poet in Frost's poems is identified often with a microscope or telescope in motion through nature. One gets the sense of a lens-eye moving through the countryside observing, measuring, adjusting to various angles to get a better view. The imaginative lens of the poet can move time and space around at will--can telescope time or extend it in order to show how changes occur, much in the way film frames can be slowed or speeded up so that motion is made visible.

The sense of the poet as lens, then, runs through the poems, especially in those which deal with strangeness in nature, with inner spaces, and with things in motion in relation with each other. We will look at the way this image works. Frost sometimes mentions the microscope and telescope directly, but often his language merely suggests a lens, as does the moon in the water in "The Freedom of the Moon," both the ice and the dome of heaven called "glass" in "Birches," and the

tunnel in the frost that Meserve sees through the window in "Snow." Our human feelings, Frost seems to say, are subordinant to laws of nature such as time with its inseparable companion entropy. Although "grief may have thought it was grief," it was really the entropic passing of time that changed the young man's hair from raven color to white. As Frost's imaginative lens moves, the common physical facts of the universe take on a strange perspective, as if seen in a shadowy, wavy mirror. This is how Frost approached the twentieth century question of reality and appearances.

One of the most effective lens figures is seen in "After Apple-Picking," as, in the transition from the day's work, the poet's mind moves toward sleep and dream. The dream begins before he falls asleep:

> Essence of winter sleep is on the night,
> The scent of apples: I am drowsing off.
> I cannot rub the strangeness from my sight
> I got from looking through a pane of glass
> I skimmed this morning from the drinking trough
> And held against the world of hoary grass.
> It melted, and I let it fall and break.
> (Poetry, p. 68)

The poet does not use "ice" but "pane of glass" in substitution: a purposeful device he often uses to indicate that a metaphor is at work. It is not the dream that is strange, it is the closer look at the physical world through the lens of ice that seems strange. When the ice melts, however, he is free to flow into the realm of the dream, another natural realm of strangeness.

In "Birches," an incomplete sound-of-sense sentence near the end tells the motivation for that poem, and presents a broken-lens image of a lashed eye:

> It's when I'm weary of considerations,
> And life is too much like a pathless wood
> Where your face burns and tickles with the cobwebs
> Broken across it, and one eye is weeping
> From a twig's having lashed across it open.
> (Poetry, p. 122)

In "Birches" the lashed eye, the heaps of broken glass left by the ice storm, the fallen "inner dome" of heaven, the "snow-white trunk/Toward heaven," the cup filled up "to the brim, and even above the brim," all suggest a telescopic lens or mirror of nature. The poet's own observations in the poem are interrupted with much appropriateness by "Truth" who "broke in/With all her matter of fact about the ice storm."

It was noted earlier that Meserve had observed a "stir" and "quiver" at the far end of the tunnel in the frost in "Snow." But earlier in the poem as he looked through the window he saw a strange beast huddled against the window pane. He says of the snow:

> It looks as if
> Some pallid thing had squashed its features flat
> And its eyes shut with overeagerness. . . .
> . . .
> Or broken its white neck of mushroom stuff
> Short off and died against the windowpane.
> (Poetry, p. 148)

Meserve's imagination frightens his listeners somewhat, and brings readers to think of similar oddities in the rabbit hole and looking glass worlds of Alice in Wonderland, one of Frost's favorite books. But the monstrous pallid thing Meserve sees has a similar curious counterpart in "For Once, Then, Something." Both figures, the first thing seen when looking through the lens, obstruct the view of the truth, or are mere shadows on the wall as in Plato's famous cave metaphor of reality.

When the poet stares into a well, he sees a Greek or Roman heroic figure, possibly a Narcissus, crowned with wreaths of fern and cloud--it is himself. This ideal fellow is in a sense as monstrous as the mushroom monster of "Snow." What the poem describes, however, is a problem encountered by anyone who looks into a microscope. If the light slants the wrong way one either sees nothing or his own eye. The criticism against the poet as lens-observer has been that he spends too much time looking into wells which show him only his own image. He stands accused of anthropomorphism. No matter how he seeks truth, he sees his own ideal image.

> Others taunt me with having knelt at well-curbs
> Always wrong to the light, so never seeing
> Deeper down in the well than where the water
> Gives me back in a shining surface picture
> Myself in the summer heaven, godlike
> Looking out of a wreath of fern and cloud puffs.
> (Poetry, p. 225)

There is much difficulty in getting beyond his own glorified image, the poet finds. It is necessary for the angle of light to change in order to shine deeper into the pool. The poet's long habit of gazing, however, is not entirely in vain.

> Once, when trying with chin against a well-curb,
> I discerned, as I thought, beyond the picture,
> Through the picture, a something white, uncertain,
> Something more of the depths--and then I lost it.
> (Poetry, p. 225)

Appearances in nature, even through microscope and telescope, are patterned images. Beyond the patterns or figures mysterious physical laws lurk and evade the expectations of the mind. In certain learned ways, we expect to see ourselves and the scenery around us, so that even with science as our lens, when we try to see something of the truth the

results are few. This poem, "For Once, Then, Something," first in Harper's in 1920, is the initial poem to extend a lens metaphor throughout. Earlier poems included the metaphor in brief, subordinant passages.

Scientists and scientific philosophers themselves insist upon an attitude of uncertainty, and often express the sense of strangeness in the universe. In a recent address, the physicist John Archibald Wheeler quoted Niels Bohr's criticism of a newly-proposed theory. "It's not crazy enough to be correct!" exclaimed Bohr. Wheeler stresses the emerging concept in physics that the universe is highly participatory, as hinted by quantum theory and the indeterminancy principle, and that man's own imagination is of utmost importance in the understanding of this concept.[4] The scientific philosopher Oliver Reiser, too, places emphasis on the function of imagination in the universe. Not unlike Bergson, he says that the creative mind is everywhere, not only in man, and that its function is the means of transportation or transposition from the unmanifest to the manifest (material) world. Reiser's philosophy describes in scientific and other terms how all of this takes place, and calls the universal imaginative principle the cosmic lens.[5] The idea of God as a lens was first Newton's, a belief stated in his study of optics, and possibly would not have been foreign to Frost through Shelley's knowledge of Newton, if not his own direct reading. But perhaps the gathering metaphor of the lens is not as crazy as it seems at first if we admit that science must be open to all sorts of possibilities now, not bounded by our customary habits of mind.

While trying to see, as if through a lens, or as if he is the lens, there is jeopardy for the poet as he grows older. The boy's elan

vital permits him to fill the cup of life to the brim in true Keatsean fashion with full negative capability (poetic faith) and even above the brim. The boy sails out into life, feet kicking through the air, not knowing or caring about danger, his disbelief suspended. Keats' willing suspension of disbelief is very much like Frost's adoption of William James' "will to believe." But as the adult man goes through the pathless wood (life), he finds his vision altered by the cobwebs and twigs, and his full childhood faith is endangered. He sees that beauty is brief and illusory. He feels nostalgia, and would rather go back to be a swinger of birches than to see clearly the terrible actual destructiveness of nature, especially its tendency toward sameness, indistinctness, toward the pathless wood.

But the poems eventually say that, just as Meserve does in "Snow," the modern man with his sensibilities modified by what he sees must also suspend his disbelief and go out into the snowstorm just because of his delight in something like a mere "stir" and "quiver" at the far end of the lens. The sense of strangeness and mystery becomes larger, not smaller, as the man grows in knowledge. Large areas of unexplored territory were opened by scientific discoveries in Frost's time, and as early as 1925 he noted some of them.

> Think of the great abysses opened up by our study of the atom. Think of the strange and unaccountable actions of the hurrying winds experienced by our travellers of the skies.[6]

In spite of the small amount of knowledge a man might gain during his lifetime, then, he might still share the great adventure. The prerequisite of an attitude of humility toward knowledge, however, was an

important part of Frost's astronomical sense of things. "Humility," as T. S. Eliot observed in The Four Quartets, "is endless."

2. "We Won't Say Nothing is Clear"

In "Voice Ways," the antagonist, speaking of the clearing after a rain, contradicts the poet's insistence upon uncertainty. The poem gives a figure of the landscape telescoped toward the foreground:

> The mountains are brought up near,
> The stars are brought out bright.
> Your old sweet-cynical strain
> Would come in like you here:
> 'So we won't say nothing is clear.'
> (Poetry, pp. 301, 302)

The speaker is responding also to the Jamsean attitude toward truth that must have interested Frost. James wrote a book about truth, but in this passage I think he captures his attitude succinctly:

> Realities in themselves can be there for anyone, whether pragmatist or anti-pragmatist, only by being believed; they are believed only by their notions appearing true; and their notions appear true only because they work satisfactorily. Satisfactorily, moreover, for the particular thinker's purpose. There is no idea which is the true idea of anything.[7]

Although the poet cannot tell whether it may be truth or a pebble of quartz at the bottom of a well, the speaker in "Voice Ways" wants to insist that some things are clear after all. The clarity is the clarity of appearances of the immediate moment, however, and is subject to weather changes, as the poem indicates. The poem shows that the lens may be momentarily improved so that there is, by way of greater resolution, a much clearer scene with a sharper focus and higher visibility.

The universal relativism suggested by quantum physics nevertheless does not rule out that in nature there are "roughly zones" to

be observed, another poem says. If we care at all about the earth and its animals and trees we need to consider their capabilities beyond their natural habitats. In "There Are Roughly Zones" a couple sits discussing the fate of a fruit tree they have transplanted from a warm climate to their cold northern zone. Such transplanting, the narrator says, is like rules in human relations. Still, man often goes against his sense of zones.

> Why is his nature forever so hard to teach
> That though there is no fixed line between wrong and right,
> There are roughly zones whose laws must be obeyed?
> (Poetry, p. 305)

The poet muses that if in spring the tree does not survive, "It can blame this limitless trait in the hearts of men." Experimentation and adventure are good, as long as nature's general rules are not violated. If the laws of the zones are not observed, there will be inevitable consequences.

Yet there is a momentary sense of certainty of the landscape in "Voice Ways," as in "Moon Compasses" the scientific figure gives a sense of certainty and assurance in the moment of happiness reflected in the face of the loved one. Calipers are measuring instruments, useful in measuring cones and spheres, invented by the Greek astronomer Callipus who had proposed a calendar to allow the full moon to appear on the same day in each month. In the poem, the poet goes outdoors between two downpours of rain,

> And a masked moon had spread down compass rays
> To a cone mountain in the midnight haze,
> As if the final estimate were hers;
> And as it measured in her calipers,
> The mountain stood exalted in its place,
> So love will take between the hands a face.
> (Poetry, pp. 300, 301)

The final estimate of love may not be understood until later on, but at the moment there is a brilliant certainty. Frost expressed the irony between eventuality and felt certainty also in lectures and letters as being fundamental to life: "The love belief, just the same, has that same shyness. It knows it cannot tell; only the outcome can tell."[8] Yet the love belief in Frost has an inner Jamesean stubbornness along with the shyness, the will guiding habit, strongly spending the self, to make it come out right.

It is impossible to avoid the fact that in "Neither Out Far Nor In Deep" Frost was satirizing the general ignorance of mankind. He so bitterly despised the claim to more knowledge than was possible, and the approach to knowledge with robot-like conformity, that he could not disguise his hauteur, even in this closely-organized poem. The poem contains a lens figure within a lens figure, and the imagery is misleadingly pleasant. The first thing we note about the people of the poem is their general lack of independent thought or behavior.

> The people along the sand
> All turn and look one way.
> They turn their backs on the land.
> They look at the sea all day.
> (Poetry, p. 301)

These matter-of-fact statements lull the reader into a pleasant sense of the sea shore scene. Finally a ship comes by for the people to see.

> As long as it takes to pass
> A ship keeps raising its hull;
> The wetter ground like glass
> Reflects a standing gull.
> (Poetry, p. 301)

The sea itself is a lens, as is the ship's wetter which reflects back the unenlightening image of a standing sea bird. The wetter is the

part of the ship's hull designed to divide the water, making it easier for the ship to pass.

The people continue stupidly looking into the sea's mirror which is always the same. Further, they have turned their backs on the more varied and distinct land where more might be discovered.

> The land may vary more;
> But wherever the truth may be--
> The water comes ashore,
> And the people look at the sea.
> (Poetry, p. 301)

Frost does not have much fondness for the sea as a metaphor. Here it is symbolic for the "sameness of the wood" or lack of distinct forms. Frost is plainly annoyed with the people for not being drawn to more variety. In reading a group of poems in connection with some remarks about science at a Bread Loaf Writers' Conference, Frost said after reading this poem, "That's about the telescope and the microscope. You didn't know till I told you, did you."[9]

But to conclude this discussion of Frost's insistence that we (science) could not know very much yet should not be discouraged in our attempts toward knowledge (truth), it is interesting to note that Einstein had written an extensive explanation of his theories and the historical background of them for Scientific American in 1950.[10] The three poems just discussed, "Neither Out Far Nor In Deep," "Voice Ways," and "Moon Compasses" were all published in A Further Range, 1936. Further, Frost had written in a letter to his grandson inquiring, "Tell me especially any ideas you have in mechanics" in the summer of 1936. That is, Frost's uses of science in his poems did not wait upon articles in Scientific American, nor popular knowledge of science--he was usually

ahead of it, at least for purposes of poetic metaphor. The attitude of waiting until everybody agreed on a theory, then accepting it as all the knowledge there is, was stultifying both to science and to poetry. Nobody could know everything, and so should not be afraid to make mistakes in the search. As Frost expressed the view:

> I am so sure it is not given to man to be omniscient. There will always be something left to know, something left to excite the imagination of the poet and those attuned to the great world in which they live.[11]

Measuring and counting, for instance, Frost knew were merely part of man's technology. They are tools, not truth systems. It is as impossible for science to claim to know truth as for anyone, as James wrote, to describe the absolute. Such claims are as foolish as staring all day at the reflection of a seagull, Frost believed.

3. "Through the Interstices of Things Ajar"

In Eddington's essays on gravitation, he describes the way the motion of molecules in matter keep things in their places. He emphasized the spaces between molecules in even the most solid-looking materials.

> When we stand on the ground the molecules of the ground support us by hammering on the soles of our boots with force equivalent to some ten stone weight. But for this we should sink through the interstices of the stone floor.[12]

Frost liked the word "interstices" well enough to place it in the poem "On A Bird Singing in its Sleep," and we also have it recorded in his conversation. When he was discussing synechdoctal symbols, the test tube representing science and the cross representing religion, someone asked, "But where does poetry come in?"

"It's on the loose. Poetry is out having fun. It's interstitial!" was Frost's answer. If poetry is interstitial, and birds' song evolves through the interstices of things ajar, then poetry belongs in the same realm as evolution, just on the other side of material events, or within the crevices of matter, "on the loose" in space. Reginald Cook interpreted Frost's sense of interstitial as poetry existing within the very tissues of life. I would agree, with the further meaning, in the strictest biological sense of between the cells, and in the physics sense of between the molecules and atoms. Even in atomic physics, the Bohr atom was an imaginative visualization for activities or effects which cannot be seen. Frost was always interested in the difference between existence and non-existence, and what science could say about it. Frost probably visualized the space between cells as a sort of corridor through which present forms arrived and through which future life evolves, although he did not think of the universe as continuing forever nor of any form, including man, as existing forever.[13] Frost combined his Bergsonian sense of the tunnel of evolutionary consciousness with what he knew of the spaces within and outside of matter, so to speak, and decided that the free in-between characteristic of space was a good place for poetry to "be."

Space, of course, is also astronomical. In "Desert Places," Frost thought of the unknown areas of the psyche or soul as comparable to the distances of outer space. The human psyche is more frightening, therefore, than the spaces beyond stars, and he uses both landscape and celestial figures to describe the sense of it. The snowy field he looks into going past seems lonely: "A blanker whiteness of benighted

snow/With no expression, nothing to express." (Poetry, p. 296) The scene reminds us again of Sister Bernetta's concept of the symbolic landscape in modern poems. Further, "they" are not able to frighten the poet by talking of the possibility of man's cosmic isolation.

> They cannot scare me with their empty spaces
> Between stars--on stars where no human race is.
> I have it in me so much nearer home
> To scare myself with my own desert places.

As in "Neither Out Far Nor In Deep," the "they" of the poem are in for the poet's aggressive, adverse bravado. These sorts of ignoramuses have very little sense of the present moment, and apparently an insufficient view of man's psyche. Although looking out far they have not seen in deep. Scientists? Theologians? Humanists? We would not know unless the poet told us, and it does not matter to the sense of the poem. "They" are us.

Both in mind and body man is a creature of spaces, of distances, of blank unknown areas, just as in nature he perceives those areas. One thing we all have in common is our material structure which is similar to the structure of the physical world. The difficult poem, "The Old Barn at the Bottom of the Fogs," is about man's common structure, although it seems at first glance to be metaphorical for socio-political commentary. Frost's sense of the interstitial is presented as a tramp tells the poet of a particular barn both had slept in at some time.

> Our details agreed.
> We said Well twice to what we had in common,
> The old barn at the bottom of the fogs.
> Its only windows were the crevices
> All up and down it. So that waking there
> Next morning to the light of day was more
> Like waking in a cage of silver bars.
> (Poetry, p. 290)

The barn is the human body with its interstitial cell structure. The light shines through the Wordsworthian prison bars, but with a difference: the bars are the interstices. The poem goes on to make much of the poles or proplocks which shut the barn doors from the outside, and other details of the men's separate journeys.

But "Afterflakes" gives perhaps the best metaphor of space within matter of any in the poems. The poet looks at his shadow on the snow, "In the thick of a teeming snowfall," and then turns to look "back up at the sky" because that is where "we still look to ask the why/Of everything below." (Poetry, p. 303) That is, science is now observing outer space for answers, just as religion or astrology had pictured the skies as heaven all along. The snowfall is "thick," suggesting material, and "teeming," or full of matter in motion. The shadow on the ground is a reflection of the self and appears to be even darker than the snowstorm.

> If I shed such a darkness,
> If the reason was in me,
> That shadow of mine should show in form
> Against the shapeless shadow of storm,
> How swarthy I must be.
> (Poetry, p. 303)

Since the shadow looks dark on the ground, perhaps he is looking at it against the wrong background, and had better look up against the sky instead.

> I turned and looked back upward.
> The whole sky was blue;
> And the thick flakes floating at a pause
> Were but frost knots on an airy gauze,
> With the sun shining through.
> (Poetry, p. 303)

"Thick flakes floating at a pause" seems to me an excellent phrase for representing physical matter, and a purposeful one, not just designed to rhyme "pause" with "gauze." The pun on "frost" may spoil the poem for some, but as it ties the two metaphors together, definitely represents the poet himself, and is sufficiently subtle (as was Meserve's tunnel in the frost) I find that it does not disturb the poem's flow. "Afterflakes," not a well known poem, benefits from a scientific interpretation even more than "Design" has from Jarrell's insightful criticism because it is less accessible without it. Through the lens of science the poem's metaphor becomes available. Without that, the poem is a photographic description or a comment on good and evil in the self.

4. "To Say It Was a Lens"

The poems have many, not always obvious, figures of a duality of sight. "My two eyes make one in sight," and "My two-pointed ladder toward the sky," suggest the dual vision that pervades the poems: the constant awareness of opposites. But if one thinks of the total human body as itself a lens observing the world, the eyes are one in sight and it is possible to follow Eddington's wit on the subject:

> Our bodies are to be regarded as scientific instruments used to survey the world . . . it is preferable to avoid a hammering on one's body when it is being used as a channel of scientific knowledge . . . Let us take a leap over a precipice so that we may contemplate Nature undisturbed.[14]

Leap or not, it is impossible to get away from the hammering of matter because motion and force are the very essence of matter or life. The molecules will not stop hammering, and if the hammering did not go on there would be no gravitation, no movement. Without movement there

can be no attraction and repulsion. The lens of science must move too--it is the law. Jumping over a cliff will not violate the unalterable laws of motion with its characteristic gravitational behavior.

The numerous angles of Frost's lens on the world, his ambiguities, may annoy some, but it is certainly an approach coherent with the relativistic nature of the universe. If Frost had explained outright that the way to write poems was to be in motion and constantly observant of the motions of the world, it would not have helped readers with his poems, he thought. As the narrator says of the boy at the zoo:

> Words are no good: to say it was a lens
> For gathering solar rays would not have helped.
> But let him show them how the weapon worked.
> (Poetry, p. 293)

This, then, is how it works in one poem, "On the Heart's Beginning to Cloud the Mind." The observer-lens is travelling by train.

> Something I saw or thought I saw
> In the desert at midnight in Utah,
> Looking out of my lower berth
> At moonlit sky and moonlit earth.
> (Poetry, p. 290)

Light is present for purposes of observation. The poet sees a distant farmhouse with its late light and muses about the lives of the people on the farm. Some farm lights have gone out earlier, he thinks, and are therefore "lost to me in my surface flight." But the light of the little farm flickers, and he compares it to a flower. "It would flutter and fall in half an hour/Like the last petal off a flower."

Its flickering may be due, however, to the interposing trees. Certainly the lights suggest stars, and the poet's flight in the train, defined as "surface" flight, is compared to travel in outer space by telescope. The poem then concludes with the image of the lens:

This I saw when waking late
Going by at a railroad rate,
Looking through wreaths of engine smoke
Far into the lives of other folk.
(Poetry, p. 292)

As in "For Once, Then, Something" the indefinite word "something" appears to indicate how doubtful what we see really is. What do we see through wreaths of engine smoke, in the bottom of a well, at the far end of a snow drift, out any window? Through our space probes, in our moving scanning electron microscopes, within cyclotrons, what are we observing?

In "A Passing Glimpse," from West-Running Brook, 1928, the subject is the rate of speed of the observer.

I often see flowers from a passing car
That are gone before I can tell what they are.
I want to get out of the train and go back
To see what they are beside the track.
(Poetry, p. 248)

The poet names over some of the flowers he could not have seen. But, what if it was a flower he had never seen before or a flower noone had ever seen?

Was something brushed across my mind
That no one on earth will ever find?

Perhaps it was not a flower at all. He draws the ambiguous moral that heaven gives glimpses only to those who are not in a position to see closely. There is the sense that the mysterious something undefined has its value, too.

5. "The Change to Darkness in the Sky"

"And, of course, everything is moving,"[15] as Frost observed in a central lecture. The sky that looked sunshiny in the morning darkens at night. The wedding couple who can climb "back up a stream

of radiance to the sky" will move at a slower pace in later life. The early imagination of the poet, symbolized by the moon in an early poem sees the moon later as an ominous timepiece. Metaphors of time's slow geological changes come, in the later poems, to symbolize a "lack of joy or grief." In youth the poet had boasted of the moon:

> I put it shining anywhere I please.
> By walking slowly on some evening later
> I've pulled it from a crate of crooked trees,
> And brought it over glossy water, greater,
> And dropped it in, and seen the image wallow,
> The color run, all sorts of wonder follow.
> (Poetry, p. 245)

The poet could move his lens at will, focus it as he pleased. He drew it through the material world of the trees, enlarged it by reflection and set it in motion. Later, at a slower pace, looking down "the saddest city lane" Frost's imagination took a darker view of things, represented at a slower pace.

In "Acquainted With the Night," "I Could Give All to Time," and "Acceptance," we read Frost's later, hesitating tone of tragedy. The poet as lens is present in each of these. "Acquainted With the Night" is interesting to compare with "The Freedom of the Moon" because both contain moons and because walking is used metaphorically in both poems. In the later poem walking symbolizes metrics and time and is interrupted by a cry that is itself interrupted.

> I have stood still and stopped the sound of feet
> When far away an interrupted cry
> Came over houses from another street,
> And not to call me back or say good-by;
> And further still at an unearthly height
> One luminary clock against the sky
> Proclaimed the time was neither wrong nor right.
> I have been one acquainted with the night.
> (Poetry, p. 255)

The poem is one of Frost's best descriptions of the inevitability and relativity of time, and the time of the poem is astronomical and quantum-oriented. Wallace Martin has noted the scientific dimension of this poem. He came to the "purely textual conclusion that the 'time' involved need not refer to earthly clocks. (Scientists refer to planetary and molecular clocks as well.)"[16] Indeed they do, and since Martin noticed this fact in his explication, to biological clocks, environmental clocks, organic clocks, and so on.

The poem says that in spite of all our time-keeping devices we cannot tell exactly when, or exactly where, the interrupted cry in the night (death) is going to take place. Frost said,

> Everything is an event now. Another metaphor. A thing, they say, is an event. Do you believe it? Not quite. I believe it is almost an event. But I like the comparison of a thing with an event.[17]

Frost's use of the term "event" here refers to physics, of course. In physics, clocks are measuring devices which attempt to place an "event" or particle in space and in time. In order to see what Frost had in mind about the event of the cry in the night, I wish to describe one of these physical clocks.

A physical clock may be set up in a "given inertial reference frame," looking much like the scaffolding of a building. At each intersection the scientists affix little mirrors or timers which will register the event when it appears. The clocks are calibrated, synchronized by bouncing flashes of light between them. Each flash or tick of the mirror-clocks is counted for the time it takes light to travel around the frame, and adjusted to one meter of time. The event is discovered

in its path by three coordinates indicating its space position and the fourth indicating its time position (the fourth being the clock-flash nearest the event-particle). In physics the scientist and his clock framework together are termed the observer, and they must move to keep the event within the field of vision.[18] Possibly Frost wanted to insist that a particle was not an event until it had occurred, or come into a situation or scene with another particle. But surely the interrupted cry in the night of the poem is an event. The time-keeping of the sound of feet stops. The moon is merely a time-keeper, reflecting light like the little mirrors in the physical reference frame.

There are several excellent geological motion figures in "I Could Give All to Time." Time is telescoped in order to make its effects visible; it is speeded up.

> To time it never seems that he is brave
> To set himself against the peaks of snow
> To lay them level with the running wave,
> Nor is he overjoyed when they lie low.
> (Poetry, p. 334)

Water is brought from mountain top to ocean level. The length of time it takes is perhaps not more than a year, the time summer mountain snow may take to melt and flow into the sea. The next stanza says that more than water is changing--the whole mountains are moving into the sea:

> What now is inland shall be ocean isle,
> Then eddies playing round a sunken reef
> Like the curl at the corner of a smile;
> And I could share Time's lack of joy or grief
> At such a planetary change of style.
> (Poetry, p. 335)

The comparison of the human smile with the long period of time it takes earth to alter its surface impression brings nature's immensity close.

What is a smile or a frown in comparison to the long buckling and creasing of the earth's crust of rock and soil, to the sea's erosion of the land, the poem asks. But the poet says he will not part with certain things he has crossed "to safety with." He says he will not part with the things he has kept: "What I myself have held," that is, his beliefs.

Of these three excellent poems about time, the best-ordered is "Acceptance." The only variations in its Shakesperean sonnet form are the sentence lengths which either contain a caesura, or run on into the next quatrain because of the motion figure. The poem begins at sunset.

> When the spent sun throws up its rays on cloud
> And goes down burning into the gulf below,
> No voice in nature is heard to cry aloud
> At what has happened. Birds, at least, must know
> It is a change to darkness in the sky.
> (Poetry, p. 249)

The motion of the light is first up on to the cloud, then down into the water or perhaps the "gulf" of night. The abrupt difference is called simply "a change to darkness," and the birds nor any other voice in nature protest it. The next motion figure is of a bird closing its eye:

> Murmuring something quiet in her breast
> One bird begins to close a faded eye.
> Or overtaken too far from his nest,
> Hurrying low above the grove, some waif
> Swoops just in time to his remembered tree.
> (Poetry, p. 249)

This second bird has arrived just in time for the ironic future. But he does not sing against the darkness either.

> At most he thinks or twitters softly, 'Safe!
> Now let the night be dark for all of me.

> Let the night be too dark for me to see
> Into the future. Let what will be, be.'
> (Poetry, p. 249)

In the earliest printed version of the poem, Frost designated these individual birds with the pronoun "its"--but in subsequent versions he improved the poem by naming them "his" and "her" which allows the reader to more closely identify with the attitude of the birds.

Science has been used to good advantage in the poems discussed in this chapter. The metaphor of the moving lens extends throughout the poems, and is closely associated with mirror and shadow symbolism throughout, as in "Afterflakes" and in the reflection of the moon in the water in "The Freedom of the Moon." To move with Frost's imagination is to travel through the interstices of the material world, and to see the shadow of the self in that large mirror.[19] But whether from the Swedenborgian philosophy, Jamesean psychology, from the oriental-influenced Transcendentalists, or from his own glimpses in telescopes and microscopes, or all of these--Frost saw reality's strange shadow in the moving, mutable forms of nature.

Notes to Chapter Seven

1. "Education by Poetry," Selected Prose, p. 37.

2. Reginald L. Cook, The Dimensions of Robert Frost, p. 184.

3. Report by Thomas Wolfe, Washington Post, May 2, 1961 in Interviews, p. 266.

4. John Archibald Wheeler, "From Relativity to Mutability," Revista de Fisica 23 (1974), p. 52.

5. Oliver Leslie Reiser, The Integration of Human Knowledge (Boston: Porter Sargent, 1958), pp. 34, 51.

6. Report by Allen Schoenfield, The Detroit News, October 11, 1925 in Interviews, p. 64.

7. William James, The Meaning of Truth (Ann Arbor: University of Michigan Press, 1970), first edition 1909, p. 240.

8. "Education by Poetry," Selected Prose, p. 46.

9. Robert Frost: A Living Voice, ed. and intro. by Reginald Cook (Amherst: University of Massachusetts Press, 1975), see "An Interest in Science," pp. 175-184. This book is a collection of readings and talks given at the Bread Loaf Writers' Conferences by Frost. The poems read were: "All Revelation," "The Wood-Pile," "One More Brevity," "A Soldier," "Design," "Triple Bronze," "The Black Cottage," "The Witch of Coo's," "Neither Out Far Nor In Deep," "The Oven Bird," "An Old Man's Winter Night," "Happiness Makes Up in Height," "Tree at my Window," "The Most of It," "The Objection to Being Stepped On," and "The Road Not Taken" (pp. 175-184). Frost said, "People misunderstand me sometimes; they think I'm anti-scientist" (p. 178).

10. Albert Einstein, "On the Generalized Theory of Gravitation: An Account of the Newly Published Extension of the General Theory of Relativity Against its Historical and Philosophical Background," Scientific American 182: 4 (April, 1950), pp. 13-17.

11. Interviews, p. 64.

12. Sir Arthur Eddington, The Nature of the Physical World (1958; report Ann Arbor: University of Michigan Press, 1963), p. 113.

13. "Wise Man," Colliers (April 27, 1956), p. 42.

14. Eddington, Physical World, p. 113.

15. Selected Prose, p. 38.

16. Wallace Martin, "Frost's 'Acquainted With the Night,'" The Explicator 26:8 (April, 1968), item 4.

17. Selected Prose, p. 38.

18. Edwin F. Taylor and John Archibald Wheeler, Spacetime Physics (San Francisco and London: W. H. Freeman, 1966), "The Coordinates of an Event," pp. 17-22.

19. On Jungian shadow-mirror imagery see Kathryn Gibbs Gibbons, "Quentin's Shadow," Literature and Psychology 12:1, pp. 16-24; and Lawrance Thompson, "Mirror Analogues in The Sound and the Fury," English Institute Essays (1954), pp. 84-106.

EIGHT. Motes and Immensity

1. "The Present Is Too Much for the Senses"

In the later poems, those published in A Witness Tree, 1942, and in Steeple Bush, 1947, direct references to science increase. There are nine poems commenting on the modern scientific situation. Several of these concern geometry and mathematics, sixteen poems are either about geology or astronomy or a combination of the two including botany, and one poem is about what we now call ecology. Four or five concern relativity theory. Frost had moved into a new period of his life, his wife having died in 1938. Subsequent to that major loss in his life was the generally unsettling climate of World War II. And Thompson records many other personal losses and stresses the poet had suffered up to this time.

But in spite of these drawbacks, Robert Frost was becoming an American institution. He had received the Pulitzer prize for A

Further Range in 1937, and numerous other awards including L. H. D. degrees from three universities in 1936, membership in the American Philosophical Society in 1937, and the Gold Medal for Poetry from the National Institute of Arts and Letters in 1939. By the fall of 1943, after many other awards and degrees, he was given an indefinitely renewable appointment as George Ticknor Fellow in the Humanities at Dartmouth College where he would stay in residence until 1949. A Witness Tree received a Pulitzer Prize in 1943. Yet this was only the beginning of accolades, as the man who was too terrified to read his early poem, "A Tuft of Flowers," to a small town men's club in New England gave readings and talks to charmed audiences in colleges and universities throughout the United States. Shortly he would be making a further step into renown as poet-statesman.

There was no mistaking a change in the poetry beginning with the 1936 volume. Helen Vendler has pointed out that pejorative reviews of A Further Range by F. O. Matthiessen and Newton Arvin may not have been entirely due to their political chip-on-the-shoulder attitudes.[1] But what adverse critics did not allow, I think, was Frost's basic change in life style at this time, nor did they recognize the larger matter of audience that Frost was always so much aware of. Some differences which begin to appear in the later poetry are 1) a more direct expression of personal likes and dislikes, 2) an even greater simplification of poem and stanza form to accommodate satire, commentary or lyric, and 3) more light verse written in a folksy mode. Certainly these changes were partly due to the emphasis Frost now placed on his public career, but I think it is interesting to notice that although

they were fewer, some of Frost's best single poems are to be found in the two later books, and in the last book.

But science is not always presented in the folksy satirical manner of the later poems so annoying to the high-toned ear. In "Time Out" two or three motion figures are interlaced to compare the slope of a book, the slope of a mountainside, and the inclination of the head of a person reading. On the side of a mountain, a man could read:

> The flowers fading on the seed to come;
> But the thing was the slope it gave his head:
> The same for reading as it was for thought,
> So different from the hard and level stare
> Of enemies defied and battles fought.
> (Poetry, p. 356)

The effect of simplicity and compression in "flowers fading on the seed to come" is produced, again, by the telescoping of time, and is a figure that moves effortlessly within the larger figure of inclination of mountain, book, and head of the man. This is an interesting figure, too, for the problem of negentropy: the increment carrying over from flower to seed being the elusive negentropic factor determining order and complexification. In the poem there is a brief listing of flowers: "dwarf cornel, goldthread, and Maianthemum." Again it is nature's picture book the poet advises that we study, as he had recommended the history book of the trilobite fossils in the rocks of Hyla brook.

In the important poem "All Revelation," Frost uses a metaphor of childbirth to represent imaginative vision. In the first stanza, a head "thrusts in as for the view," although where it comes from and where it is going, "By what Cyb'laean avenue," is not known, and neither do we know what "can of its coming come." The figure of this round, moving head persists through the poem, and together with its questions

is called in stanza two: "Strange apparition of the mind." Cyb'laen curiously refers to the mother of gods in Greek and Roman lore who "presided over mountain fastnesses and fortified places."[2] Cybele was a sort of mother nature figure.

The additional questions of the second stanza are where the child will go and what it will leave behind. A geode figure is then presented as symbolic for the human head. Its inner crust is entered to suggest comparison with the advent of human consciousness. The geode, a common perfectly round stone, has a hollow center with an inner crust of crystal formations, or an inner dome. These crystals form in various colors and reflect light well. A geode is strong and more difficult to break than other stones because of its roundness and hollow center.

> But the impervious geode
> Was entered, and its inner crust
> Of crystals with a ray cathode
> At every point and facet glowed
> In answer to the mental thrust.
> (Poetry, p. 332)

The poem does not say that a cathode ray entered the geode, it says that the geode when open glows at every point and facet of its inner crust of crystals, reflecting the light from the cathode ray. The figure compares the power of the geological formation of the geode with the evolution of human consciousness. The suggestion is that the human head contains great powers of inner reflection (and a tough, fortressed outer crust or skull) and possibly alludes to similarities in crystal structure development to development in organic cell structure. The final stanza describes the principal activity of the human eye-brain child.

> Eyes seeking the response of eyes
> Bring out the stars, bring out the flowers,
> Thus concentrating earth and skies
> So none need be afraid of size.
> All revelation has been ours.
> (Poetry, pp. 332, 333)

Existence is a conversation between man and nature in which the human eye or lens brings out stars and flowers, seeing them in perspective. That is, our physical vision impression changes the sizes of things so that they do not overwhelm us. Seeing things in depth perspective, arranged, they are in relation with each other and with man the observer. Stars and flowers are put in scale with man.

Because vision is shared with other persons, "eyes sought the response of eyes," the revelation of sight has more meaning. The whole poem expresses a curious interaction of reflections in nature, and between people. The scientist and theologian Teilhard de Chardin, whose first discipline was geological archeology, expressed the reflection-interaction process in nature this way. He comes close to what Frost says in "All Revelation."

> L'amour sous toutes ses nuances, n'est rein autre chose, ni rein moins, que la trace plus ou moins directe marquee au coeur de l'element par Convergence psychique sur soimeme de l'Univers.[3]

This movement of the universe inward upon itself, as in the brain's development by creasing, or the human embryo's infolding definition, or the eye's ability to differentiate and to share with other eyes the sense of inward illumination that is the experience of love, both scientist and poet have sensed and described.

Indeed there seems to be no lack of major lyrics in these two later books of poems, especially of those using scientific figures

metaphorically. Another mathematical-astronomical figure appears even in the poem's title, in "Happiness Makes Up in Height for What it Lacks in Length." It seems as if a giant caliper sweeps across the earth as the sun rises and sets in the poem.

> When starting clear at dawn
> The day swept clearly on
> To finish clear at eve.
> I verily believe
> My fair impression may
> Be all from that one day
> No shadow crossed but ours
> As through its blazing flowers
> We went from house to wood
> For change of solitude.
> (Poetry, p. 333)

The day, measured by the height of the sun, has given the poet a "lasting sense of so much warmth and light." The flowers are the day's flowers, not the field's, as the poem transfers an essentially special figure (field) into a time figure (the day from dawn to eve) so that time itself is kept by the "fair impression." The couple does not move through space, they move from solitude to solitude in the same steady state. They change their environment (from house to wood) but do not move because of any impetus from it or attraction toward it. The sun moves a much greater distance than they do. Theirs is the only shadow, as if they are the shadow-measurer of a giant sun dial across the day. The happiness of that day is as great as the distance from the earth to the sun and therefore, mathematically, encompasses more than all the days of the couple.

But in the poem "Carpe Diem" the lovers are now older, and overwhelmed with the plethora of experience around them. To them the present moment is not as important.

But bid life seize the present?
It lives less in the present
Than in the future always,
And less in both together
Than in the past. The present
Is too much for the senses,
Too crowding, too confusing--
To present to imagine.
(Poetry, pp. 335, 336)

Just as William James had said that it is almost impossible to capture the moment of the present as it is speeding away, this couple had sensed the difficulty of realizing their present moment. Further, the modern and especially the contemporary periods of the twentieth century are crowded full of so many new areas of conscious awareness, it is nearly impossible to make sense of anything. Linda Wagner cites Theophile Gautier who stated the problem well, I think for any age: "To be of one's own time--nothing seems easier and nothing is more difficult. One can go straight through one's age without seeing it, and this is what has happened to many eminent minds." We may still be too close to the modern period to see how well Frost saw it, but on this point of the sense of the overcrowded consciousness, many are agreed in retrospect. Frost's involvement with science was certainly an important part of the meaning of his own time, and many of his insights do extend even to the present in that subject. I think it was partly because of the confusions of his time, the sense of crowding, the sense of "too much," that Frost used simple forms and a simplified diction that he allowed to become, perhaps, too simple in the last poems. He almost moves into the existential realm of Samuel Beckett's last work, except that he must keep his American rural stance. However that may be,

Frost wrote his poems to be read by an audience he knew, and some of the lyric power of Hyla brook had gone underground.

2. "The Seeming Facts of Light"

If Frost had not been a good self-satirist, one poem directly about relativity theory and therefore about Einstein whom Frost admired, would seem in poor taste. The poet imagines in "Any Size We Please" that spacetime curvature was envisioned by a scientist who, feeling lonely, stretched his arms out

> to the dark of space,
> And held them absolutely parallel
> In infinite appeal. Then saying, 'Hell,'
> He drew them in for warmth of self-embrace
> He thought if he could have his space all curved,
> Wrapped in around itself and self-befriended,
> His science needn't get him so unnerved.
> He had been too all out, too much extended.
> (Poetry, p. 396)

But only several poems earlier, in "Skeptic," Frost places himself in exactly the same situation, by saying that however immense the universe may be, he sometimes feels it very close and limited. "Skeptic," moreover, contains a knowledgeable reference to the Doppler effect, or "red shift" in astronomy, and also to the common laboratory physical problems still derived from this not fully explained effect.

First of all, the poet's skepticism begins with a reference to atoms being changed in color from black to white.

> Far star that tickles my sensitive plate
> And fries a couple of ebon atoms white,
> I don't believe a thing you state.
> I put no faith in the seeming facts of light.
> (Poetry, p. 389)

This is not Frost's best poetry, but it is good science. A man named Huggins used the Doppler principle to show that the star Sirius, Frost's favorite, was receding from the solar system at a velocity of twenty-nine miles per second. This measurement was disputed as it did not tally with Einstein's model of the universe. But in 1929 Edwin Hubble confirmed that the universe was indeed expanding. He observed a constant rate of speed at which all galaxies are departing from our own. Earlier it was observed that patterns of spectral lines from stars showed the kind of atoms they contained. This was shown in the laboratory by exciting atoms to emit light. Measuring the light from the "fried atoms" gives the proper period of light in the spectral line. A comparison of starlight and its laboratory counterpart then yields the velocity of recession of the star being observed and tested. In present physics this expansion of the universe suggested by the Doppler effect, the shift from the violet to the red side of the spectrum, is still technically hypothetical. There is no way to explain why the galaxies would be receding; possibly there was a giant explosion at the beginning. Frost continues to address Sirius, the "far star:"

> I don't believe I believe you're the last in space
> I don't believe you're anywhere near the last,
> I don't believe what makes you red in the face
> Is after explosion going away so fast.
> (Poetry, p. 389)

So in this poem, as in "A Wish to Comply" Frost turns satirical wit against modern astronomical physics, possibly the most sacredly revered branch of science, revealing its own fundamental uncertainty.

Frost takes Einstein's part in the final quatrain of "Skeptic," saying that he himself often feels the universe is somehow limited, bounded, and not as immense as the expansion theory might suggest.

> The universe may or may not be very immense.
> As a matter of fact there are times when I am apt
> To feel it close in tight against my sense
> Like a caul in which I was born and still am wrapped.
> (Poetry, pp. 389, 390)

This suggests that the mind of man is yet like that of an unborn child. There is much compression of knowledge in this poem, perhaps more than the lyric form will allow in the diction of the first two quatrains, yet the tone becomes more reflective in the last stanza.

Millikan's work was noted earlier in connection with entropy. He received a Nobel prize in 1923 for measuring the charge on an electron and thereby showing its weight. Frost mentions this part of Millikan's work in "A Wish to Comply," satirizing the fact that no one can actually see the electron "mote" of energy.

> Did I see it go by?
> That Millikan mote?
> Well, I said that I did.
> I made a good try.
> But I'm no one to quote.
> . . .
> It's a wish to comply
> And see as I'm bid.
> I rather suspect
> All I saw was the lid
> Going over my eye.
> I honestly think
> All I saw was a wink.
> (Poetry, pp. 391, 392)

This doggerel verse is similar in form to the much longer "Kitty Hawk" poem of the final volume in which Frost also presents science commentary. The satire here, however, must not lead us to think that the poet was

giving up his faith in the physical world. He is just having fun with science again, and with the attitude of compliance he eschewed.

Two more brief examples will indicate Frost's increasingly outright explanatory style. In "The Middleness of the Road," a geometrical observation serves to compare the car with a terrestrial and an astronomical sense of things. The car sometimes seems to go off into the sky, or curve into the woods as it follows the road. But the mechanical movement, although it copes with "near and far," in a sense, has

> almost nothing to do
> With the absolute flight and rest
> The universal blue
> And local green suggest.
> (Poetry, p. 388)

And in "The Lesson for Today" while expressing his dislike for "social planners" he explains why:

> They've tried to grasp with too much social fact
> Too large a situation.
> (Poetry, p. 351)

The larger situation is what has made people confused, and has often shattered our confidence. Scientific knowledge is impossible to grasp:

> Its contemplation makes us out as small
> As a brief epidemic of microbes
> That in a good glass may be seen to crawl
> The patina of this the least of globes.
> (Poetry, p. 352)

Our relationship to the rest of the universe is simply overwhelming. Nor can philosophers help any:

> They are philosophers, and from old habit
> They end up in the universal Whole
> As unoriginal as any rabbit.
> (Poetry, p. 354)

The truth of our time, Frost says in this poem, must be faced as the reality of fragmentation. Regardless of what "science and invention" may be able to do, man's time is limited. He must face "broken-off careers;" and even "The earth itself is liable to the fate/Of meaninglessly being broken off." (Poetry, p. 355) The lesson to be learned comes more from the nature of the universe than from planners' remedies.

3. "In a Balearic Sling"

A Balearic sling is not an instrument for scientific measurement, it is a sling shot, apparently used by natives of an island in the Majorica and Minorca islands of the Mediterranean. But the sling shot is used in an astronomical figure in "A Loose Mountain," subtitled "Telescopic." The poem says of the star-shower Leonid that is is "no doubt" aimed at rebellious earth for having "taken artificial light/ Against the ancient sovereignty of night." The star-shower never reaches the earth but is a hint to us that the "loose" mountain nearby is something the "Outer Black" has kept in reserve for throwing at us, as if from a sling shot.

> The loose mountain lately seen to glint
> In sunlight near us in momentous swing
> Is something in a Balearic sling
> The heartless and enormous Outer Black
> Is still withholding in the Zodiac. . .
> (Poetry, p. 361)

The figure is kinesthetically effective. The reader feels the heaviness and sway of the mountain. Here Frost has combined geology and astronomy, and a bit of anthropology, in one poem.

For archeology and anthropology, "A Cliff Dwelling" and "To an Ancient" will illustrate. In the first, a spot of black halfway up a limestone wall turns out to be a cave, causing the poet to think of the man who had to climb up to reach his home. "I see a callus on his sole," he quips, punning on calous soul. (Poetry, p. 392) And in the poem addressed to the ancient man, Frost contemplates the remains of the cave dweller's bones in lime, and the man's eolith, or flint instrument, the poet notes that perhaps he gains nothing by using rhyme instead of a more durable instrument. (Poetry, p. 382) The question for Frost was always what would stay.

The poet's further struggle with the meaning of time in these two later volumes appears in many more poems. In general, they seem to observe, nature moves slowly and man moves rapidly. In a fast-paced figure, the poet expressed his wish to communicate:

> May I in my brief bolt across the scene
> Not be misunderstood in what I mean.
> (Poetry, p. 386)

The figure bolting across the scene emphasizes the difference in time between the length of the individual life, and the extent of the whole play. In contrast, in "Something for Hope" the slow-paced figure, telescoped to show nature's movements clearly, moves regally, has nothing hasty or busy about it:

> So busy yourself with other things
> While the trees put on their wooden rings
> And with long-sleeved branches hold their sway.
> (Poetry, p. 376)

Thus, in such imagery, combining nature and a hint of theatrical metaphor, Frost still intuited the movements of the world. Perhaps the subtle sense of theatrics is self-ironic, Frost's role having become

a series of public performances. But the momentary clarifications of human life persisted, and would persist brilliantly in either poems or performances to the end.

4. "Beware of Coming Too Much to the Surface"

However much the poet loved to spend time looking into the picture book of nature, his demanding public career had become a fact. But it was not a fact he had not foreseen. He had an extraordinary ability to see ahead in his individual life, as he had in intellectual matters. For instance, writing from England in 1915, he expressed the wish for some sort of summer writing conference:

> . . . or barring that I shall get me a farm where between milking one cow and another I shall write Books III IV and V and perhaps draw a few people about me in time in a sort of summer literary camp.[6]

In 1921 Frost began to participate in the Bread Loaf School of English at the mountain campus, and suggested the writers' conference, according to Untermeyer, in 1926.[7] Although the Bread Loaf Writers' Conference in Vermont was actually founded by others, Frost was sought out for it, spending his first summer there in 1938, and almost every subsequent summer. We might recall, too, that it was in Frost's high school valedictory that he compared poetry with statesmanship as the opposites of thought and action, inseparably linked.[8] His dreams had a way of coming true; as he said, he did not believe in the future, he believed the future in.

Yet I think one reason Frost became a public figure was that he was indeed afraid of audiences. His immediate family was well

acquainted with this unusual fear of public appearances. He seems to have somewhat lessened his anxiety sometime in 1938, and wrote to Lesley in November of that year:

> This afternoon at four thirty I shall be reading to a Harvard audience and Tuesday evening I shall be reading with you in Washington. My fear of these things beforehand has largely left me. I have done my ten or fifteen this fall in Ohio Pennsylvania New York and Massachusetts with almost perfect calm. Something strange has come over my life. I shall never be the scared fool again that I used to be. Nothing can more than kill me.[9]

Fame increased. In 1954 Frost was sent by the Department of State to the World Congress of Writers in Brazil. He was given a medal by the Theodore Roosevelt Society for Distinguished Service in American Literature in 1954, and in 1957 was sent again by the Department of State on a good-will mission to London where he received three degrees in Great Britain, and returned to accept more at home.

In 1958 there were more awards, in 1959 three academic degrees, a college financial award, and a gala Waldorf-Astoria birthday dinner for his eighty-fifth birthday that turned out to have been his eighty-sixth.[10] With all this, a Vermont mountain was named for him, and in 1959 President Eisenhower authorized that he be given a Congressional Gold Medal. Frost was perhaps most visible to everyone in the United States when, at age eighty-nine, he read his poem "The Gift Outright" at the televised inauguration of President Kennedy. Just following that event he was sent on another good-will mission, this time to the Soviet Union to visit Premier Kruschev. He and Kruschev talked about their mutual interests in grandchildren and the future. Frost proposed that the two countries "compete" in the arts and in cultural exchange

rather than in military ways. "We've laid out rivalry in sports, science, art, democracy," he said. "That's the real test, which democracy's going to win?"[11] This visit took place in August preceding the October Cuban missile crisis, during which fearful time Kruschev averted a nearly unavoidable world disaster by withdrawing nuclear weapons from Cuba.

The young President and the elderly poet died in the same year, 1963. On one occasion, Kennedy made a speech in which he honored not only Frost, but as Frost would have approved, all the arts, remarking about this country's attitude toward artists and their value:

> In honoring Robert Frost we therefore can pay honor to the deepest sources of our national strength. That strength takes many forms, and the most obvious forms are not always the most significant. When power leads man toward arrogance, poetry reminds him of his limitations. When power narrows the areas of man's concern, poetry reminds him of the richness and diversity of his existence. The artist, however faithful to his own personal vision of reality, becomes the last champion of the individual mind and sensibility against an intrusive society and an officious state . . . . And I look forward to a world which will be safe, not only for democracy and diversity, but also for personal distinction.[12]

If former presidents of the United States may be counted, surely Frost was not misunderstood in what he meant in his brief stay on the scene. Frost's attainment in making poetry, to be distinguished from popular verse, noticed by the general public was surely almost unique in his time, and a contribution to the modern literary world. But to provide a balance to his wish to be understood in "The Fear of Man," he wrote "The Fear of God" about the experience of being a public figure. In it he advises that if one becomes elevated from "Nowhere up to Somewhere," a distinctly American pattern, "Stay unassuming," he says, and

> Beware of coming too much to the surface
> And using for apparel what was meant
> To be the curtain of the inmost soul.
> (Poetry, p. 385)

That one must keep his "inmost soul" protected from public view was a belief that prevented Frost from being direct to one and all on subjects he considered private. In this, perhaps, he was a Puritan of the first order.

It was entirely true that the present was too much for the senses, as Heisenberg, for one, had declared in 1945: "An understanding of the physical world in a primary fashion is impossible."[13] But Frost still wanted the scientists to try to explain their findings, and went on reading what he could of new developments in science to keep in touch with nature's gradual revelation. Meantime nature's bard had become also his nation's bard. It had been in 1913 that Frost, writing to his friend John Bartlett from England, stated:

> I expect to do something to the present state of literature in America. That is why I don't want any slaps at my friends at home.[14]

And he did that. I think, although the passage preceding this one speaks of his poetic style, here Frost meant also the whole state of literature, its status in relation to the rest of society. It was not a very obvious form of change, but it was a difference for the future's sake.

Notes to Chapter Eight

1. Helen Vendler, "Robert Frost: The Years of Triumph 1915-1938 by Lawrance Thompson," The New York Times Book Review, August 8, 1970, p. 1 ff.

2. Charles Mills Gayley, The Classic Myths (New York: Blaisdell, 1963), first edition 1893, rev. and enl. 1911, pp. 44, 59.

3. Pierre Teilhard de Chardin, Le Phenomene Humain (Paris: editions du Seuil, 1955), p. 294. "Love, in all its subtleties, is nothing more or less than the indirect track made through the center of the material by the psychical convergence of the universe upon itself." (my translation)

4. Linda Welshimer Wagner, The Poems of William Carlos Williams: A Critical Study (Middletown, Connecticut: Wesleyan University Press, 1964), p. 2.

5. Taylor and Wheeler, Spacetime Physics, p. 156.

6. Letter to Sidney Cox, 2 January 1915, Selected Letters, p. 149.

7. The Letters of Robert Frost to Louis Untermeyer (New York: Holt, Rinehart and Winston, 1963), pp. 200, 201.

8. Harris, "Robert Frost, Science," p. 18.

9. Family Letters, pp. 199, 200.

10. Selected Letters, Thompson's chronology preface, pp. xlvii to xlviii.

11. Quoted by F. D. Reeve, Robert Frost in Russia (Boston: Little, Brown, 1964), p. 112.

12. John F. Kennedy, "Poetry and Power," Atlantic 213:2 (February, 1964), pp. 53, 54. This issue is dedicated to Frost. It contains an article by Archibald MacLeish, and other related material.

13. Mason, Main Currents in Scientific Thought, p. 407.

14. Letter to John Bartlett, 6 August 1913, Selected Letters, p. 88.

NINE. Clarification and Departure

1. "An Adventure by Science"

Robert Frost's final volume of poems, In the Clearing, 1962, explains the outcome of his use of science, and his thoughts about science as they relate to motion. The lyric voice of the poet, although not so frequent as in the early and middle, and even the later, poems, is still strong in at least six poems in which science is evident. Further, these six lyrics have a greater value than many of the earlier best lyrics because they carry the authority of knowledge and belief pursued over a lifetime, as well as a winnowing of Frost's lyric style in which only the most satisfying grain remains. Each of these six poems centers upon a concern already discussed here. "The Pod of the Milkweed" is metaphorical for entropy or waste in the universe; "Closed for Good" presents the poet himself as motion figure; "Escapist--Never," being patterned on Emerson's "Brahma," gives a figure of existence

itself; "The Draft Horse" is a metaphor of evil in the universe; "Ends" deals with the ambiguous outcome of love; "Questioning Faces" gives a glimpse of beauty in nature as seen through a window-lens; and "In Winter in the Woods," the final poem of the book, is a comparison of the poet's own figure with nature's figure or design.[1] Many of the other poems in the volume have some lyrical lines, and many are not meant to be lyrics at all, but these six do sing in Frost's unmistakable tone.

Yet it is in the public talks, and in the least lyrical of the last poems that we find some of Frost's most direct commentary on science. His discussion of his poetic theme of mind entering matter became more frequent and more elaborated as he compared the process to science's discoveries about the material world. He took up the problem of increasing technology, or materialism, and its effects in our culture. Contrary to what might be expected of a simple New England farmer-poet who liked handmade ax handles and made his own lap desk out of three pieces of wood and a stick, Frost became the proponent of technological ingenuity: "Man's ingenuity was good." He took a problem-solving, rather than a reactive, view of continuing scientific exploration.

> And it's been an adventure by science, and the confidence in science that the spirit can save itself and live in material things.
>
> And you know where we have got the idea? Well, the Lord God Himself materialized, didn't he? He ventured into material existence; he substantiated; he took on flesh. And we've just taken on, by science and the confidence in the spirit, that it can't be lost in science. That's been us. That's what I'm going to talk about. And the motion has been west by north into materiality. See. All metaphors, and all things.[2]

This statement, given at the University of North Carolina in 1957, compresses Frost's thinking about the relation between science and motion into several metaphors. First he gives the religious metaphor of energy entering matter, then the historical figure of the directional migration of knowledge. He tells his audience that all this thinking is metaphor based in the material world of "things."

The material world has the special significance to Frost that he resented, as we noted in his defense of Bergson, any disparagement of it. He especially scoffed at the idea of non-existence. Existence, plainly, is all there is. In "A Never Naught Song," in "Version," and in "Escapist--Never" he makes the point clear. The first poem, in trimeter couplets declares: "There was never naught/There was always thought." Matter, he explains, is all one, and yet divided, a concept more easily grasped by the poetic than the Aristotelian mind; and a universal intelligence has it all thought out.

> Matter was begun--
> And in fact complete,
> One and yet discrete
> To conflict and pair.
> Everything was there,
> Every single thing
> Waiting was to bring,
> Clear from hydrogen
> All the way to men.
> (Poetry, p. 426)

The universal secret has conceptualized existence "Out of coming in/ Into having been!" There is nothing, not even the time problem, that has not been taken into account, although we may not understand it: "And this gist of all/Is so infra-small/As to blind our eyes/To its every guise." By this Frost means that physicists are still seeking

smaller event forms: quarks or something yet smaller and more elusive, now. Such particle-events could be traced only by their effects. They were no more than motions appearing within measurement range, making perhaps a quiver or stir. If thought is motion, one might say they are no more than thoughts, or deductions made by the scientists. "So the picture's caught/Almost next to naught/But the force of thought." These event-particles move quickly into "having been," and nothing is left but the track or figure they made.

The unfinished poem "Version" is also concerned with the origin of matter and the denial of non-existence. (Poetry, p. 427) Lathem notes that it was originally written to include lines 9 and 10, and 13-16, although these lines do not occur in the original published version of "Version." The rejected lines do not improve the poem, but they show, especially by line 16, "That's how matter mattered," clearly what the subject of the poem is. The metaphor is of an archer hunting for "non-existence." The shaft he shoots is blunted against non-resistence, the joke being that in curved spacetime the object will return to where it started, eventually. Further, according to Eddington's description of the Fitzgerald contraction principle, the shaft will change its length as it travels (the same principle as the Doppler effect). It is motion that changes the rod in Eddington's description:

> By setting in motion the rod with all the little electric charges contained in it we introduce new magnetic forces between the particles. Clearly the original balance is upset and the average spacing between the particles must alter until a new balance is found. And so the extension of the swarm of particles--the length of the rod--alters.[3]

Thinking of the archer's shaft as the rod of the Fitzgerald contraction, then, Frost makes the point that physically there can be no such discovery as non-existence. The shaft gets blunted on non-existence, after all.

In "Escapist--Never" the influence of Emerson's "Brahma" is apparent in the line, "Any who seek him seek in him the seeker." The shape of the universe becomes metaphorical for the stoic or Buddhistic attitude that:

> His life is a pursuit of a pursuit forever.
> It is the future that creates his present.
> All is an interminable chain of longing.
> (Poetry, p. 421)

I presume that the poem is in riddle form and the answer to the riddle is: man.

A further poem of Frostian cosmology is "Accidentally on Purpose." The universe is pictured, humorously, as a sort of mobile sculpture of the sort popular in the 1950's when it occurred to artists that motion might be added to structural art. It also reminds of a model of the atom shown in planetarium displays, probably a simplification of the Bohr model.

> The universe is but the Thing of things,
> The things but balls going round in rings.
> Some of them mighty huge, some mighty tiny,
> All of them radiant and mighty shiny.
> (Poetry, p. 425)

The purpose of the universe is discernible in its form: it is going around. Williams' "no meaning but in things," becomes "no meaning but in the motions of things." Yet, says Frost, for us the best guide is human feelings for human behavior, not intellection.

> And yet for all this help of head and brain
> How happily instinctive we remain,
> Our best guide upward further to the light,
> Passionate preference such as love at sight.
> (Poetry, p. 425)

For man, guides as suggested by James and Bergson, of passionate intuition, guides in the psychological dimension, are of utmost importance for human beings. It is interesting to have this comment from Frost so late in his life.

But "Kitty Hawk" tells us "in three-beat phrases" of an important experience the poet once had near the beach where the first successful airplane flights were made by the Wright brothers. Lesley Frost recently wrote, "Would that my father might have lived to see the launchings to the moon--and the arrivals there. He had consuming interests in astronomy and flight."[7] In the poem Frost recounts his experience at Kitty Hawk, North Carolina (or, rather, at Nags Head and the Outer Banks near there, as deliniated in the biography by Thompson) where, as he walked along the beach, he remembered that the moon was full.

> And its being full
> And right overhead
> Small but strong and round,
> By its tidal pull
> Made all being full.
> (Poetry, p. 433)

And in Part Two of the poem he says that our ability to fly in machines means, "Mind you, we are mind," and that we have simply extended our imagination into material inventions. Further explaining our peculiar proclivity for complexifying matter, he says,

Westerners inherit
A design for living
Deeper into matter--
Not without due patter
Of a great misgiving.
All the science zest
To materialize
By on-penetration
Into earth and skies
(Don't forget the latter
Is but further matter)
Has been West-Northwest.
(Poetry, p. 435)

The poem goes on, elaborately as the form will allow, to say that the ethereal has gone with "one mighty charge" into matter in recent Western history. And we have made the universe intellectually ours to the most remote "Swirl of neon-lit/Particle afloat." The next section of the poem is titled "The Holiness of Wholeness" and says, essentially, that we should have more confidence in ourselves, arguing again for synechdoctal metaphorical thought. We should not be frightened into not at least trying to use our minds.

The becoming fear
That becomes us best
Is lest habit-ridden
In the kitchen midden
Of our dump of earning
And our dump of learning
We come nowhere near
Getting thought expressed.
(Poetry, pp. 441, 442)

In the last section, "The Mixture Mechanic," mechanics being the old Cartesian word for physics, Frost gets to his favorite insight that because everything is in motion we must respect the laws of motion in our own actions, and that this fact about the universe will guide us in physics and technology and everything else. "Action," after all,

"is the word." We must keep on with the adventure by science, maintaining the humility to obey the laws of nature.

2. "A Line of Shadowy Tracks"

In his last book, Frost allows himself a more complete identification with his concept of the figure as an object in motion through time and space. This is how he pictures himself in the signatory poem of the volume. In a three-quatrain tetrameter lyric, the poet fells a symbolic tree with a symbolic ax, and returns making tracks through the snow that the setting sun has left some afterglow to light.

> At four o'clock I shoulder ax,
> And in the afterglow
> I link a line of shadowy tracks
> Across the tinted snow.
> (Poetry, p. 470)

The tracks make a "shadowy" reflection of the self, as in earlier poems. The poet's movement has been made through spacetime. The tracking is the record of his identity, a signature, a last printed figure.

And in "Closed for Good" Frost says that when he is finished making footprints into winter, other creatures of nature will walk in the same paths he took. The last stanza shows us some tracks:

> And so on into winter
> Till even I have ceased
> To come as a foot printer,
> And only some slight beast
> So mousy or so foxy
> Shall print there as my proxy.
> (Poetry, p. 416)

But the poem has given figures overlaying figures. In the first stanza, there is a road cut through the countryside. The people who formerly raced by, cutting the road "to last" are missed now by the poet:

And come not back with steed
And chariot to chide
My slowness with their speed
And scare me to one side.
They have found other scenes
For haste and other means.
(Poetry, p. 415)

Against this scene of the past, the foot-printer figure of the last stanza is clearly symbolic of considerable time having past, a lifetime. But, in between in autumn, the road is covered with a "priming coat of leaves." The poet then tells a tree silently that because there is less sun in the late autumn,

The prospects are in white
It will be further done,
But with a coat so light
The shape of leaves will show
Beneath the brush of snow.
(Poetry, p. 416)

These may all be considered mirror images, suggesting the layers of reality in time as the poet remembers the world, as he moves, making a figure, into winter along the country road. We may recall that "In White" was the first title of "Design" and that Frost's wife's maiden name was White. It is one of those unexplainable lyric touches that the first snowfall is said to allow the shape of leaves to be still visible, unless we recall Frost's fondness for the forms of things: for distinctness. And it is with the poet's light touch of humor that, when his own footprints have disappeared under heavy snow, only a very lightweight sort of animal dares to venture over them--others might sink into the heavy snowdrifts. A number of other poems in the final volume make specific comments on scientific subjects, but probably "Kitty Hawk" and others cited here best illuminate the attitude Frost

had toward science in his last years. To intuit nature's motions, whether slight or astronomical, seems still to have been the poet's intention.

Notes to Chapter Nine

1. Poetry, pp. 411, 415, 421, 443, 444, 445, and 470 ff.

2. "Frost in the Carolinas," recorded and ed. Richard J. Calhoun, The South Carolina Review 7:1 (November, 1974), p. 5. Frost's talk was delivered at the University of North Carolina, Spring, 1957.

3. Eddington, Physical World, p. 5.

4. Lesley Frost, "Robert Frost Remembered," p. 17.

TEN. A Shaping Metaphor of Motion

1. "I Wait for Form"

Frost's prosody, the metrical arrangements, the stanzaic and whole poem arrangements, is best considered as a framework in which the whole poem's structure rests. The full and actual formal arrangement of the whole canon of the poetry depends upon much more than the formal elements of prosody. We can be led astray by examining metrics alone. Meaning must be taken into account in each phrase or figure because the sense, or the meaning in the sound of the voice, interacts with meter, line, stanza, or other prosodic elements to make, as Frost pointed out, another thing altogether. But with such cautions in mind, one is free to be astonished by the number of forms from traditional verse Frost used, and to applaud, with Lawrance Thompson, Frost's "exceptionally fine understanding and mastery of technical possibilities," and his "extraordinary range in metrical and stanzaic modification."[1]

It was in Lawrance Thompson's early study of the poetry in 1942 that the first and only ample analysis was made of prosodic elements in Frost. Furthermore, Thompson took into account some of the modifications Frost made upon forms (although a full interpretation was not possible at that early date) such as the sound of sense, the emphasis placed upon metaphor, and something of the relationship between these and meter or stanza and poem form changes. But I think it should also be remembered that Frost did not make the interpreter's job easy by pointing out to him the importance of, for instance, synechdoche and motion imagery. As we have seen, clues about style were often tucked away in letters to family and friends, and Frost often dodged helping the literary critics find him out. Thompson, who has probably done more helpful ground-breaking work in Frost scholarship than anyone else, wrote of the difficulty one finds in the poems even after long study:

> But I can't get the slipperiness out of it. There are times when I despair of explaining to anyone else what really still puzzles me about Frost's slipperiness. And some people think he is so charming because his poems are so--easy to understand![2]

Because of this slipperiness, the further one goes into Frost studies, the greater is the hazard of sinking through the snowdrift. It is possible to point out the nature of some of the difficulties.

The difficulties exist because, first of all, Frost adopted poetic form just as he found it: then his modifications created an irony against the established or expected forms. He also adopted ideas just as he found them, and used them as framework ideas within which to modify, to create some entirely new thought. We have noted what he did with the grindstone theory. Even with religion, as Nancy Joyner has

pointed out, Frost took popular misinterpretations of biblical writings as given, and was then able to form witticisms which allowed fresh interpretations of biblical passages.[3] Sometimes when Frost speaks, in his poems and talks, as if he is fully taken in by a popular misconception, he is merely describing it so that he can modify it later in some way. It does take all sorts of schooling to get accustomed to this sort of fooling. Anybody can get lost in the layers of meaning. That is why the study of any one element of the poems, or of the prosody alone, will simply lead us astray.

In the interpretation of Frost's poems up to this point we have looked at not only ideas which arose from scientific knowledge, but also sometimes at the poem form, and sometimes at some event of the poet's life or personal historical situation. But in poetry it seems to me that what we feel the force of mostly is the formal elements. It is the sense of form in a poem, the result of that esthetic faculty in man that enables him to intuit the large and small arrangements of the universe, Bergson says,--it is that manner of organization that draws us to poetry rather than, say, to dissertations. Two large ingredients go into poems, after all: knowledge and organization of knowledge. The imagination simply integrates all that.

In Frost's life, as in the form of his poems, "action is the word." (Poetry, p. 442) In the form of the poems, as we have noticed, both through the movement of feeling and thought in the stream of consciousness, motion imagery becomes the most frequent and significant prosodic element. The motion figure is almost always coherent with the sound of sense of the human voice, and it also sometimes serves as a

selected natural object behaving in a revelatory way. The motion figure is not exclusively kinesthetic: it incorporates other kinds of imagery such as sight, sound, scent, kinesthetic pressure or touch, and taste. And it can speed up or slow down time for whatever purposes the poem has. It can reveal something about time and, obviously, by its speeding up and slowing down, the motion figure modifies the metrical framework. Meanwhile, from the other approach, the metrical framework with its accompanying voice sounds modifies the motion figure. This plurality of sound and movement that must become a unity in the successful poem, may be illustrated, for instance, in "Acceptance" wherein the rapidity of the birds' movements creates a tension, a balance, or a "strain of music," to use Frost's term, against the solemn voice sounds accented fully on each syllable to slow the meter in the closing "Let what will be, be." (Poetry, p. 460)

In looking back over the volumes of Frost's poems for their prosody, I want to keep in mind some of the qualifications just mentioned. In the three volumes up to 1916, including the small, privately printed Twilight, all the prosodic elements to be employed throughout the poetry are already present. Several devices were dropped early, notably archaisms and personifications, but other than these none were either dropped or added, although emphases were changed. In the inscription to the one extant copy of Twilight, Frost mentions Bliss Carman's praise of "My Butterfly," the only poem of that early volume he later republished, and remarks of the little book as a whole, "A few scattered lines in it are as much mine as any I was ever to write."[4] Other poems in it are "Twilight," "An Unhistoric Spot," "Summering," and "The Falls."

Frost's tantalizing observation may refer to lines such as the final one from "Summering," a poem about sleeping in summertime: "I could not slumber if the wains were out!" because, although the archaisms "slumber," and "wains" (wagons) are used, the voice sound of sense breaks through. In spite of archaic words, the diction of the line is basically idiomatic, ending in the preposition "out." The refrain line of the quatrains in "The Falls" is also sound of sense and idiomatic, ending in a substantive preposition, the verb changing from present to past tense in the second quatrain: line 4, "And the falls come down there," and line 8, "And the falls came down there," changing only the verb tense.

But almost entirely uncharacteristic in both form and meaning is the last stanza of "Twilight" which is pure Swedenborgian mysticism, so rhapsodic as to seem to dissolve both scene and poet before our very eyes:

> By invocation, O wide silentness
> Thy spirit and my spirit pass in air!
> They are unmemoried consciousness,
> Nor great nor less!
> And thou art here and I am everywhere!
> (Twilight, facsim., n. pag.)

Perhaps this poem was reason enough for Frost to ever afterwards insist on the lyric being placed in a scene, in a setting, and given theme to steady it down. The rendering of such pure lyrical or mystical experience simply did not communicate without the ordinariness of common day to balance it. The violation of the old dramatic unities of time, place, and action is too extreme. But surely no one who loves Frost's poems can read Twilight without being touched by the evidence that

even so so sophisticated a modern poet was, at the start, almost totally innocent of his eventual technical competence. Yet it was interesting to Frost to later recognize something of his own style in only a few lines, but they are there, at the beginning of his attempt.

A Boy's Will showed, as against other new poetry being published in London at the time, Frost's preference for traditional metrical forms. Stanza lengths were regular, usually quatrains or sometimes five line stanzas. The preferred poem forms were the ballad, the ode, and the sonnet. Thompson categorized most of these poems as dramatic, descriptive, or reflective lyrics. The basic meter is usually iambic pentameter, as in "The Trial by Existence" which uses rhyme, and in "A Prayer in Spring" which has four iambic pentameter quatrains rhyming aabb--or the two couplet quatrain as in Shelley's "The Sensitive Plant." "Into My Own" is also a poem of couplet-rhyming quatrains, but is basically a Shakespearean sonnet, the usual form of it having quatrains rhyming abab. But throughout, Frost will vary forms slightly, and the sonnet will expand and contract, be added to, and subtracted from, to make briefer or longer poems which are essentially three verse paragraphs with a final set off conclusion or commentary. The imagery of A Boy's Will, as throughout, is primarily in the kinetic mode. To present the kind of stillness he sensed in "Twilight," Frost presents in "Stars" a marble Athena, a common ornament in Victorian homes: "Minerva's snow-white marble eyes/Without the gift of sight."

Little bits of quoted conversation between people, and between flowers and breezes, had already appeared in some of the poems of the first volume, but in North of Boston, published the following year,

came the long dialog narratives in the verse form of Shakespeare, Milton, and the English Romantics: blank verse. Across its basic iambic pentameter, by using dialog in dramatic settings, the poet was able to get the sound of sense effect he wanted, and to establish that curious ironic truth-of-feeling sense rendered from idiomatic speech in tension with regular meter. He dedicated the book: "To EMF: This Book of People" which I think suggests the psychological realism he intended to capture in it. The best known among the psychological poems are "Mending Wall," "The Death of the Hired Man," "The Mountain," "A Hundred Collars," "After Apple-Picking," and "The Wood-Pile." He even named some of the characters, such as Mary and Warren, in "The Death of the Hired Man." It becomes clearer even than in the first volume that the imagery is meant to be symbolic, and that it is almost always phrased metaphorically. After North of Boston, Frost mixed in more of the simple lyrics with the psychological narrative dialogs or monologs, but he never again wrote anything as "pure" as "Twilight."

In Mountain Interval, 1916, the poems are still primarily in blank verse, including shorter poems such as "An Old Man's Winter Night," interesting for its internal consonance; "Birches," replacing rhyme with repetition of end words, and longer narratives such as "Out, Out--," and "Snow," a very long unrhymed dialog: but important poems also appear again in other regular forms. "The Road Not Taken," written for Frost's friend Edward Thomas, is four five-line stanzas in iambic tetrameter, while "Hyla Brook" is iambic pentameter with a complexly varied scheme. Sometimes, in these poems, Frost uses the neo-classic rhymed couplet for serious, sometimes for light or satiric verse. This form

anticipates his later New England Primer verse, sometimes called doggerel either in the technical or pejorative sense.[5] In the Hill Wife sequence in this volume, the form varies in each poem, presenting a successful virtuosity of sequential psychological lyrics. "Brown's Descent" is done in the regular abcb rhyming ballad stanza appropriate for the mock heroic tale, and "The Bonfire" is a long but suspenseful blank verse narrative having end words and rhyming sounds often repeated several lines apart, binding the story loosely.

The volumes New Hampshire, 1923, and West-Running Brook, 1928, comprise what I have called the middle poetry. In New Hampshire, no new forms are introduced except in "For Once, Then, Something" which Thompson calls basically a hendecasyllabic Latin form; and there are other usual variations on basic forms. Both "The Ax-Helve" and "The Star-Splitter" are in blank verse narrative, as is the shorter "The Need for Being Versed in Country Things." In West-Running Brook the title poem is blank verse narrative dialog, the characters having long speaking parts as if saying their own poems together. Some other notable poems are "Spring Pools" with two rhymed six-line stanzas, "A Soldier," a superb regular Shakespearean sonnet, "The Armful" in heroic couplets, and "Acquainted With the Night" in four three-line stanzas ending in a couplet, a variant sonnet that Thompson points out is in terza rima, meaning the tercets have interlocking rhyme. Although not an especially easy form to use, it supports one of Frost's best poems.

A Further Range may be considered a pivotal volume between the middle and later poems. I have drawn upon it primarily to show the fully-realized shaping metaphor of the moving lens in one grouping of

its poems. The difference between the volumes up to this one, and the later and last volumes, parallels the change in Frost's life from private to public, as we have already noted. Yet A Further Range contains superb poetry with continuing apt variations in metrics. "Two Tramps in Mud-Time" is a narrative in iambic tetrameter with anapestic variation, composed of nine eight-line stanzas. "Desert Places" is essentially a Shakespearean sonnet with two additional lines. "The Master Speed" is a regular Shakespearean sonnet. "Design" is a perfect Petrarchan sonnet, with the first eight-line stanza being a presentation and the sestet a reflection on it as in the strict ancient form that influenced many of Frost's poems. "Provide, Provide" has seven tetrameter tercets rhyming aaabbbccc and so on, with an epigrammatic ending. Although Frost continued to lean heavily on blank verse, his variations on regular metrical and poem and stanza forms still produced some of his most memorable work. Blank verse was considered a regular form. It was the new phenomenon of free verse Frost did not attempt.

In A Witness Tree, 1942, the memorability of poems written in regular forms continues. "The Silken Tent" is a regular Shakespearean sonnet of noted excellence. Seven quatrains rhyming heroically comprise "The Quest of the Purple-Fringed" written in Frost's basic ballad style. "The Subverted Flower" is rendered in trimeter lines of irregular rhyme; and "The Gift Outright" is in blank verse. In Steeple Bush, 1947, "Directive" is in masterful sustained blank verse. As the volume begins to lean more toward political and social commentary,

although there is not very much of that, there are a number of rhymed couplet satires.

Some fine poems with regular metrical forms in the last volume, In the Clearing, 1962, are "The Draft Horse," in five trimeter quatrains, "In Winter in the Woods Alone," (title taken from the first line by Lathem) in three tetrameter quatrains, and the lighter "Peril of Hope" in three dimiter quatrains. "Pod of the Milkweed" is in two long stanzas of variant rhyme, and illustrates Frost's expanded Petrarchan sonnet form. That is, the basic presentation is followed by reflection, yet there are a number of additional lines in each section. Many of the other poems are epigrams or light verse in dimeter heroic couplets. The narratives are often too topical and diffuse to match the range and concentration of the earlier dialog narrative poems, although they are interesting for other reasons.

2. "Pythagoras' Comparison of the Universe with Number"

Pythagoras whom Frost mentions in "Education by Poetry" believed that the universe had in it the beauty of perfect mathematical arrangements. This inner harmony was a source of music in nature that poets, composers, and mathematicians all tried to imitate. Nature was sacred to Pythagoras, and so were poetry, music and mathematics because they were the earthly reflection of the harmonious music of the spheres. Pythagoras' hope was to discover the sacred harmonies through the mathematics of his time. Frost's remarks about science coming from Pythagoras' comparison of the universe with number are therefore not surprising.

> But the best and most fruitful was Pythagoras' comparison of the universe with number . . . and we had science and all that has followed in science.[6]

In poetry, metrical analysis is the counting of the number of feet in a line, observing the variant stresses of the feet (accented and unaccented syllables, or length of stress of the syllable) and establishing a basic number pattern. Through the nineteenth century poets referred to verse as "numbers." Frost liked the Pythagorean metaphor probably because it supported his use of regular metrics.

Since Pythagoras, one might say, the universe has become more rather than less mysterious and its harmonies more difficult of access. The awkward human voice breaks its rhythms across the regular meters, its intonations straining against the perfect grammar and sentence structure toward meaningful sounds:

> My versification seems to bother people more than I should have expected--I suppose because I have been so long accustomed to thinking of it in my own private way. It is as simple as this: there are the very regular preestablished accent and measure of speaking intonation. I am never more pleased than when I can get these into strained relation. I like to drag and break the intonation across the meter as waves first comb and then break stumbling on the shingle. That's all but it's no mere figure of speech though one can make figures enough about it.[7]

This is one of Frost's most helpful statements about his use of metrics, although he restated the idea a number of times. Whatever metrical dissonance there is in the poems, then, comes first from the strain between voice sound of sense and the basic meter. Sometimes the voices are characters. Sometimes it is the poet's own voice we hear. Less often it is an unidentifiable narrator such as the third voice in "West-Running Brook."

I would not venture whether it is true that Frost chose to use metrical forms as a basis for his poems because "insanity in his own family gave him enough evidence to fear the lack of such inner structure," as Barry claims.[8] Every poet chooses one form or another. I would compare Frost's bending of the traditional meters (he did not use all of them, after all) with the activity of modern painting going on in the same creative era. Braque and Picasso first painted traditionally from likeness, and then carried elements of tradition into their work, breaking perspective (in line, form, and so on) across the old traditions. Cubism, for instance, was merely a way of looking at an object from several sides which is bound to give the model more than two eyes (or feet) at once, just as Frost gave regular meter an extra foot or so here and there.

Frost's participation in the modern period, say from Twilight, 1894, to West-Running Brook, 1928 (which brings us just to the beginning of the depression in the United States, perhaps a turning point into the contemporary present), was a time of artistic rearrangements. The artists of the modern period, whether poets, painters, sculptors, or musical composers, were all in a rage for new forms. While respecting the esthetic order of the past, they made departures from it. Such artistic departures retained many of the same materials of the art form along with similar attitudes and beliefs. One may see the typically modern (and contemporary) mixture of Romantic and Classic characteristics in a large artist such as Picasso with whom I compare Frost here because they both were able to reach large audiences of their own cultures in their own time.

But Frost's enjoyment of form is tucked into the poems everywhere, as well as being revealed in his ponderous or light remarks. For instance, anyone would think the little poem "Boeothian" simply means that Frost does not like closed systems of philosophic thought. While it does mean that on one level, it is also a special comment for artists, for poets, from poet to poets, about metrics and poem form. The title "Boeothian" is the clue.

> I love to toy with the Platonic notion
> That wisdom need not be of Athens Attic
> But well may be Laconic, even Boeothian.
> (Poetry, p. 362)

"Wisdom" is the word designed to lead us astray. While many others were from Athens, the Greek poet Pindar was Boeothian. Pindar (with only one exception) wrote no poems in the same metrical stanzaic form, while his contemporaries usually searched for and chose one form and stayed with it. Frost is obviously comparing his practice of using various meters and stanza and poem forms with Pindar's. This poem is slight but revelatory of Frost's avowed intention to make "one poem different from another."

I think among the reasons Frost loved form, the most compelling was his avid interest in the physical universe, motivated by his obsessive concern with the entropic rush of time within (or as) matter. Form was the negentropic current within the entropic torrent, for Frost. A poet's conscious intuition could capture the larger design by truly seeing the smaller designs in nature and in art. This was the way life moved toward clarity, toward sanity, by the distinction of one thing from another through art, Frost believed.

> Anyone who has achieved the least form to be sure of it is lost to the larger excruciations . . . It is really everybody's sanity to feel it and live by it.[9]

Perhaps Frost felt that a greater variety of metrical forms together with a variety of settings and distinct situations for human voice sounds would better reflect nature's variety. In any case, it is satisfying to the artist to be able to create even the least form.

In one iambic pentameter narrative, "The Black Cottage," the voice alters the basic meter interestingly. The speaker is a character we know only as "the minister." Regular sentence form is altered and grammar is changed, as the minister is carried away into his fantasy:

> Most of the change we think we see in life
> Is due to truths being in and out of favor.
> As I sit here, and oftentimes, I wish
> I could be monarch of a desert land
> I could devote and dedicate forever
> To the truths we keep coming back and back to.
> (Poetry, p. 58)

The voice emphasis must be on "oftentimes" to mean he sits there often, although "and oftentimes" should metrically be two iambs. The voice might slide in several intonations over the word, but the word has emphasis, either by the voice rising or getting louder or both. This cannot be shown in our usual scansion systems which can show only that "Iambs march from short to long,/With a leap and a bound the swift Anapests throng" as Coleridge helpfully wrote. Where is an extra foot or two, anacrusis at the beginning of lines, evidently a frequent effect of voice sounds to Frost's ear. In the second to last line quoted above, anacrusis is the only metrical variation except for the feminine ending or extra unaccented syllable at the end of the line. In the last line an anapestic foot (also anacrusis) is followed by a

spondee, another anapest, and an iamb with an additional foot, unless one wants to hear the voice sound "back and back to" with every syllable accented, in which case we have a double spondee. Scansion becomes a debatable subject always in poetry, and I believe these lines indicate the difficulty involved. Frost's "voice ways" do suggest why there is always scansion disagreement.

We are on firmer ground looking at what the motion figures do to bend the basic metrics. These abundant bounding images we have been noticing everywhere in the poems have no generally prescribed pace whatever. Frost remarked on the subject of tempo in modern civilization (and the same, as relativity theory showed, is true of nature):

> Give me the speed of a perfectly geared automobile that I can slow down to half a mile an hour, to tell one flower from another. My intolerance has been for the throng who complain of the modern pace yet strive to keep it. There is the widest choice of companions you will fall into step with, be they living or dead. There is no such thing as a prescribed tempo.[10]

Obviously the poet is making reference to two of his own poems, "A Passing Glimpse," and "The Gum Gatherer" which were discussed earlier for their motion figures.

An even more obvious example of what happens to the metrics because of motion is to be found in "Brown's Descent" which was discussed earlier also. The metrics reveal devices of slow and fast pace. As Farmer Brown picks up speed, the ballad metrics become regular, and there is no slowing interruption of the metrics. This gives a speeded-up effect:

> He reeled, he lurched, he bobbed, he checked:
> He fell and made the lantern rattle
> (But saved the light from going out).
> So halfway down he fought the battle.
> (Poetry, p. 138)

And the basic ballad form itself helps to move the motion figure along. But in "Meeting and Passing" the pace is slow to accommodate the more serious material. It is a strolling pace. Sentences end in the middle of lines and there are also caesuras in the phrasing. The iambic meter is often anapestic with spondees and double spondees, even with a string of accented syllables as in the last line to slow the pace even more:

> And all the time we talked you seemed to see
> Something down there to smile at in the dust.
> (Oh, it was without prejudice to me!)
> Afterward I went past what you had passed
> Before we met, and you what I had passed.
> (Poetry, p. 119)

Here, the stresses on all the words in the phrase "you what I had passed" except for the iambic "and you" cannot be avoided because of what the voice does. These devices both slow the voice pace and emphasize the somber tone of meaning.

It is the same technique Frost uses in many last lines of somber-sounding, serious poems, and for important lines within poems as well: "We love the things we love for what they are," and "Today will be the day of what we both said." And often, to emphasize words which were important both in voice emphasis and in meaning, Frost underlined them so the reader would not miss the emphasis. For instance, he italicized this word from "Birches," as we noted earlier in another connection: "Toward heaven, till the tree could bear no more," and this word from "The Code": You understand that meant the

easy job/For the man up on top, of throwing down/the hay . . . ," emphasizing, as the voice would do, non-substantive words just as William James did in insisting on, say, a "feeling of toward," and a "feeling of down."

As for the diction in the poems which must be considered part of the formal arrangement always, Frost purposely limited his vocabulary to the everyday word. Robert P. Tristram Coffin wrote in 1964,

> It was no accident, of course, that Robinson and Frost brought in the plainer style in poetry . . . Thanks to science, and it is good to be able to thank science for some assistance to poetry . . . the tide had set, around the beginning of the century, towards a plainer way of speaking.[11]

"Science" perhaps had distracted everyone from verbal to technological virtuosity. Poems lost their embellishments. Poem logic therefore became more evident. Frost's word-arrangement is, of course, the poems' logic. Logic is an important element of structure and of Frost's intention; therefore, it needs its own full discussion.

3. "A Better Wildness of Logic"

Frost's objection to the logic of the English sentence with its subject-verb-object structure was essentially the same as that of William James. Activities could not be emphasized because the so-called substantives, the adjectives and nouns, received all the attention. Besides, the Aristotelian deductive framework that is the background of the normal English sentence was not a sufficient one to describe nature which is composed of processes. Scientific method and thought had pretty much left grammar behind.[12] The Aristotelian deductive system employed in school debate, furthermore, was not especially

productive since it prevented ample exploration of subjects, wasting energies on rhetorical fencing. Frost wrote to Sidney Cox in 1926,

> But I'd like to put it to you while you are still young and developing your procedure if you don't think a lot of things could be found to do in class besides debate and disagree. Clash is all very well for coming lawyers politicians and theologians. But I should think there must be a whole realm or plane above that--all sight and insight, perception, intuition rapture.
> I have wanted to find ways to transcend the strife-method. I have found some . . . .[13]

For the purpose of "contending" in life situations, Frost suggested a course in "rowing" might do, but for the class in writing and literature he recommended another approach which he codified somewhat in his later explanations of thought as metaphor, and education by presence, which is to say, by the example of the teacher's work. But what Frost thought of "logic" as popularly conceived from Aristotelian either-or propositions, and of strict methodologies built on popular logic, is best illustrated in his outrageous example, or metaphor of "logic."

> Your whole life can be so logical that it seems to me like a ball of hairs in the stomach of an angora cat. It should be broken up and interrupted, and then brought together by likeness, free likeness.[14]

This cure, clearly, could not be affected by any deductive process. Metaphorically, the breaking up of a previous shaping metaphor in order to make a new one becomes necessary because of the factor of process (i.e. the cat hairs will continue to collect). This analytic-synthetic method in Frost reminds me of one of his favorite Emerson poems, in which the god Uriel discovers a heretofore unknown principle in the universe:

> Line in nature is not found;
> Unit and universe are round;
> In vain produced, all rays return;
> Evil will bless, and ice will burn.[15]

Having discovered relativity and mutability in nature, the young god Uriel perceived the new law as a "sad self-knowledge," and withdrew into "his cloud" from which he would not emerge except when "truth-speaking things" occur. Such interesting processes are those in which good comes out of evil, or the "speeding change of water." Whenever he does speak because such processes occur, the other gods blush, but they "know not why." Uriel retreats back into his cloud.

But the logic of a poem that Frost has mostly in mind is the movement the whole poem makes from beginning to end. The best description of a single poem's motion that I have found is John Robert Doyle's analysis of "Looking for a Sunset Bird in Winter." He writes,

> Though it is merely a presentation of the winter landscape, it is never allowed to become static. The movement is a progression in time. In the first line the sunset is disappearing; in the last the stars are beginning to come out. Between these extremes movement is continuous . . . Even the description of the sky in the final stanza is not static. The cloud of smoke across (movement) the blue was put there by a brush stroke (movement) from north to south (movement). Finally, the piercing (movement) little star was through (movement).[16]

What I am saying about the metrical line in Frost's poems, then, is that at least two other factors altered the basic metrical pattern, in addition to the sound-of-sense of the meaningful voice. Motion figures speeded up or slowed down the pace, altering the metrical pattern, and a different logic, the logic of the progression of figurative ideas in a space-time frame (notice that the poem Doyle discusses is space description in a time frame) also determined how

the metrics would go along. Frost describes this, hinting that his kind of logic is indeed of consequence,

> I tell how there may be a better wildness of logic than of inconsequence, but the logic is backward, in retrospect, after the act. It must be more felt than seen ahead like prophecy. It must be a revelation, or a series of revelations, as much for the poet as for the reader.[17]

Here, of course, the poet is talking about the psychological process of creating the poem as well as its movement or "series of revelations," and it seems to me that this point in Frost's theory of poetry is the most interesting of all the fresh thought he gave to the subject. The poem was formed into a series of figures or metaphors by synechdoche and all such devices with the voice carrying it across the metrical base, but Frost's insistence on this as a better logical structure is quite provocative. The intuition is not logical thought to start with but stretches out, so to speak, into thought. The demarcation between feeling and thought is functionally unimportant because of the esthetic component in the "haunting feeling,"

> Poetry won't begin in thought. It begins in a haunting feeling that must be satisfied . . . The first thing that the mood picks up is not words . . . it is some vague urge of an idea to embody itself in. The idea picks up the words. The words make the poem. You've got to know the difficulty of it.[18]

This explains something of the nature of poetic logic, at least as Frost arranged it in his poems. The logic, seen as part of the diction, also works to alter the basic metrical line, changing the pace of the poem, depending upon the ease or difficulty of the thought progression, along with the motion figures which carry the thoughts.

Throughout this study of Robert Frost's relation to science in the poems, I have come up against the form of the poems in one way

or another, and been forced by the nature of the subject to describe the prosody of Frost's poems. The prosody has turned out to be a coherent subject for exploration, with many elements fitting meaningfully and formally together. It has been especially rewarding to see the way esthetics has related to nature in Frost's thought. Moreover, there is one brief poem that illustrates, for me, the lyric Frost form. It is not the long blank verse poem we think of as typically-Frost, but a honed-down meditative lyric. It contains all the elements of style I have been discussing, in perfect compression. It lodges in the mind to stay.

4. "Nothing Gold Can Stay"

I began this study with a look at Frost's boyhood in San Francisco of which he later wrote, "Gold dusted all we drank and ate." There was the gold of relative financial security while his father was alive, but there was also the great golden city of San Francisco, to which he referred in the last talk he gave to a college audience:

> And one of the expressions I like best is--in the bible it is and in poets--they say, "of no mean city am I." That's a great saying, ain't it?--to be "of no mean city," like San Francisco or Boston.[19]

I think Frost was guardedly referring to his own astronomical viewpoint, his coming to terms with entropy and also to that golden time of childhood when the nature poets were first read to him, when his mother's Swedenborgian mystical mind analogized poets, nature and a devoted life with science.

Frost took the "cosmic motes of yawning lenses," as well as the "inner dome of heaven," as material for his poems. Yet metaphors from his knowledge were often expressed in the most simple lyric. It was a long time since the gold-dusted days of early childhood to the turns of irony and the other movements of "Nothing Gold Can Stay." The poem has ordinary heroic couplet rhymes, and a trimeter base of eight lines. Everything moves and changes, figure transposed into figure in an abbreviated sonnet form (two quatrains instead of three) in which the final couplet is compressed into one line. The poem opens with a phenomenon of early spring.

> Nature's first green is gold,
> Her hardest hue to hold.
> Her early leaf's a flower;
> But only so an hour.
> Then leaf subsides to leaf.
> So Eden sank to grief.
> So dawn goes down to day.
> Nothing gold can stay.
> (Poetry, pp. 222, 223)

The short sentences slow the pace. The poet is talking about how quickly yellow buds open into flowers on early bushes and trees such as the willow. Further, these early flowers seem to be leaves but hold the illusion only briefly. Compression or telescoping of time is accomplished by claiming these early "leaves" last an hour (not several days). Then the flower-leaf becomes another kind of leaf--a leaf of entirely another morphology anyway, so who can say it is the same as the bud it once was? It has subsided into another form. In this manner Eden changed into something else, and early morning becomes the Wordsworthian "light of common day." The irony of gold not staying is that it is widely presumed to be the substance one can keep, while

other substances decay. The poem shows a number of gold color images in nature that will not keep--for they are all motion figures. Everything is mutable, "Nothing gold can stay." This is a poem about appearances, myths, and time. But the irony of the poem, finally, is that, relatively speaking, the poem itself does stay. Its form keeps it in motion in our minds. Certainly, Frost's perception of change in nature, of motion itself, was a valuable shaping metaphor in the poems throughout. And I think this poem shows, as well as any, the general sense of that metaphor Frost drew from nature through science. Spring, innocence, life, love, enlightenment, all change to our vision and within our experience--it is the nature of the universe, both heaven and atom.

Notes to Chapter Ten

1. Thompson, Fire and Ice, p. 92 ff.

2. Thompson, Letter to the author, 6 December, 1969.

3. Nancy Joyner, "Robert Frost: Exegete," paper read at the Modern Language Association Annual Meeting, New York, 1974.

4. Twilight (Lawrence, Massachusetts, 1894). Facsimile copy, Jones Library, Amherst, Massachusetts. Original in University of Virginia Library. The inscription is dated February 1, 1940 by Frost.

5. See Poetry, p. 331. The poem "Sycamore" indicates Frost's interest in the New England Primer form.

6. "Education by Poetry," Poetry and Prose, p. 332. The essay was first in Amherst Graduates' Quarterly, February, 1931; Selected Prose, p. 37.

7. To John Cournos, 8 July, 1914, Selected Letters, p. 128. From Little Iddens, Gloucestershire. Cournos was a novelist living in New York.

8. Robert Frost on Writing, Introductory essay by Barry, p. 20.

9. Early Years, p. 627.

10. Conversation with Reginald Cook, The Listener, August 26, 1954, in Interviews, p. 147.

11. Robert P. Tristram Coffin, New Poetry of New England: Frost and Robinson (New York: Holt, 1964), pp. 78, 79.

12. Herbert L. Searles, Logic and the Scientific Method (New York: Ronald Press, 1948), Chapter Two, "Logic and Language," pp. 19-42.

13. Letter to Sidney Cox, c. January 1, 1926, Selected Letters, pp. 324, 325.

14. Gorham B. Munson, Robert Frost: A Study in Sensibility and Good Sense (New York: George H. Duran, 1927), p. 110.

15. The Complete Poetical Works of Ralph Waldo Emerson (New York: Houghton Mifflin, 1924), pp. 13-15.

16. John Robert Doyle, The Poetry of Robert Frost, An Analysis (New York: Hafner, 1962).

17. "The Figure a Poem Makes," Complete Poems, p. vii.

18. Robert Frost, Introduction to A Swinger of Birches by Sidney Cox (New York: Collier, 1961), p. 2.

19. "On Extravagance," Dartmouth Alumni Magazine, March 27, 1962, in Poetry and Prose, ed. Edward C. Lathem and Lawrance Thompson (New York: Holt, 1972), p. 447.

APPENDIX

APPENDIX

On Frost and Science

The way to move through Frost's ambiguities is boustrophedonically, to use a word from the Greek that Frost wished would not be lost.[1] It means reading according to the path of the plow, as Frost explained, or reading every second line backwards as the plow turns at the end of a row. Opposite directions, opposite attitudes and meanings must always be considered in Frost's poems alongside the most obvious meanings. But Frost, like William James, liked to show when opposites need not be in conflict, when they were false dichotomies. For instance, probably remembering the adverse criticism Bergson's Creative Evolution had received, and quarreling with his culture's tendency to think that to be serious meant to be ethereal rather than realistic (and to know nothing of the physical world in order to be religious) Frost took this boustrophedonic tack and turn against the pejorative sense of the word "materialist."

> It is wrong to call anybody a materialist simply because he tries to say spirit in terms of matter, as if that were a sin. Materialism is not the attempt to say all in terms of matter. The only materialist [here the plow begins to turn to the pejorative sense of the word]--be he poet, teacher, scientist, politician, or statesman--is the man who gets lost in his material without a gathering metaphor to throw it into shape and order. He is the lost soul.[2]

Clearly, the matter of saving the soul is metaphorical to Frost for the ability to perceive order, or to have, as we say, one's own vision of life. This would be, for Frost as grounded in Jamesean psychology, an indication of the health of the personality as well. But more importantly, I think, Frost's material was the nature of the universe, and his gathering metaphor a vision of its motion.

Frost was interested in myths of all sorts as most modern poets were. Sometimes his readers may not be inclined to take his knowledge of science, or of other fields, seriously because he often took a popularly accepted view about science as given, and worked from there as he did with the popular pejorative sense of "materialist." For instance, Frost got a good metaphor of popular belief and social interaction from the grindstone theory, a generally held puritanical attitude about the nature of creativity based in the old Cartesian theory of the origin of the universe. However, it must be noted that some of Decartes' ideas tallied with scientific fact, such as his view that space was not a vacuum and that the earth was shaped as an oblate spheroid, both observations Frost used. Descartes, like many other scientists of his time, also spent much time dividing up the elements, but his essential grindstone theory, that primary blocks of matter were whirled in a giant vortex and ground down to their present shapes

by friction, was as out of date to Frost as the idea that a piece of literature was either good or bad according to how easy or difficult it was to read or to write.

> The Iliad, Odyssey, and Aeneid are easy. The Purgatorio is said to be hard. The Song of Songs is hard. There have been works lately to surpass all records for hardness. Some knotted riddles tell what may be worth our trouble. But hard or easy seems to me of slight use as a test either way.[3]

We can see from this that Frost did indeed intend "The Trial by Existence" as satire, although human suffering is true enough. The concept of the trial is a social myth arising from experience of hardship.

Although Frost used popular myths of all kinds as starting points in his poems and talks, he made one statement about myth that clarifies its relation to science for us. In a playful mood, he begins to talk about works one dreams about writing:

> I'm going to write a play--not called the Scopes trial but called the Telescope's Trial. I've always been interested in astronomy . . . . And in the play I make it come out that we had more left to guide our lives, how to live, from science than we do from mythology. Mythology is the Bible or any other mythology you want.[4]

Not disparaging mythologies altogether, Frost seemed to want to leave another clue to the way he made use of the knowledge of science in his poems: sometimes it revealed "how to live." Numerous poems come to mind such as "There Are Roughly Zones," "Acceptance," and "Meeting and Passing" in which natural phenomena or laws of nature serve as models for man's ethics and attitudes. There is a good possibility, Frost is saying, that astronomy will tell you more than myths can, and that science is a better way to be close to nature: choose something like a star to deepen the stoical sense of life. Is it implicit in Frost's poems that science is "something like a star?"

Frost sought answers to some of the larger social questions through science. One of his favorite problems was freedom, especially the freedom of the individual. He questioned Niels Bohr about the will or freedom of particles in matter, and reported Bohr's response to an audience:

> . . . and he [Bohr] said, "Yes, it is so. It can come when it wills and as it wills; and the action of the individual particle is unpredictable. But it is not so of the action of the mass. There you can predict." He says, "That gives the individual atom its freedom, but the mass its necessity."[5]

Bohr's statement of the behavior of a particle and the mass is no less paradoxical or ambiguous than a Frost poem. It is one of the scientific situations in which the answer is both rather than either-or: and yet the mass will undoubtedly have its effect upon the individual particle as in Frost's figure of the silken tent. The tent is "loosely bound."

Granted that the concept of freedom is not simple, Frost further compared his poetic material with the material of nature, to write in a late poem:

> The reason artists show so little interest
> In public freedom is because the freedom
> They've come to feel the need of is a kind
> No one can give them--they can scarce attain--
> The freedom of their own material:
> So, never at a loss in simile,
> They can command the exact affinity
> Of anything they are confronted with.
> (Poetry, p. 461)

And further, as nature has time in it, so do poems: metrics. "Free verse so called is really cherished prose. . . ./It has its beauty, only I don't write it," Frost tells us in iambics. (Poetry, pp. 460-461) It was noted in this study how closely he related the timing of astronomical and biological clocks with metrics, with prosody, in

"Acquainted With the Night" and other poems. There had always to be, in poetry, as in the physical world, the actual sense of the small but significant freedom of the particle or individual within the determined mass: "in the moment we depart," in the choice of direction, or in the freshly connected thought.

This tracing of Frost's metaphor of motion was not intended to be systematic, nor is this afterword a summary. Frost avoided the systematic for good reason: it often tends to make the writer claim more than he knows to be actual fact. This study has not assumed to cover every point one might make about Frost and science. But I hope that, by concentrating on dominant aspects of motion found in the poems, it has been possible to reveal concerns that were uppermost in Frost's thinking. I suspect that it may come out, when Frost scholars have time to consider, that the entropy-negentropy puzzle was the impetus for Frost's vision of motion and his avid interest in science. Probably an unusual knowledge of the reality of death was experienced early by the poet and he retained a consequent desire to hold back the cataract that moves unalterably toward death.

We have looked sufficiently at poems dealing with the problem of waste in the universe to see Frost's concept of it. Entropy is now of much interest again to the scientific world. In fact, in 1974, Albert Claude, accepting a Nobel prize in physiology, expressed himself on the subject of entropy-negentropy in much the same tone as Frost's.

> Life, this anti-entropy [negentropy], ceaselessly reloaded with energy, is a climbing force, toward order amidst chaos, toward light among the darkness of the indefinite, toward the mystic dream of love, between the fire which devours itself and the silence of the cold.[8]

Claude's words bring to mind "Desert Places," "The Bonfire," "West-Running Brook," "Fire and Ice," and the enormous Glacier of "Directive." I believe one can say that, on balance, many of Frost's most profound expressions in poetry were tempered by his knowledge of and quarrel with science.

Notes to Appendix

1. "A Romantic Chasm," Selected Prose, p. 76.

2. "Education by Poetry," Selected Prose, p. 41.

3. "The Constant Symbol," Selected Prose, p. 23.

4. "An Interest in Science," in Robert Frost: A Living Voice, pp. 175-184.

5. "Education by Poetry," Selected Prose, P. 38.

6. Albert Claude, "The Coming of Age of the Cell," Science 189:4201 8 Aug. 1974, p. 435. Republished, Le Prix Nobel en 1974 and Nobel Lectures (New York and Amsterdam: Elsevier Publishing Company, 1975).

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