[22] Willa Cather, *Death Comes for the Ardhbishop* (New York: Vintage Books, 1971), 50

[23] Wes Jackson speaks of "nature's measure" in his book *Becoming Native to This Place* (Lexington: University Press of Kentucky, 1994).

Naturally Thinking: Judaism, Modes of Thought, and the Environment

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RELIGION, THINKING, AND THE ENVIRONMENT

We will not find our way out of the current crisis of the natural world—global warming, loss of essential resources, and corruption of life-sustaining ecosystems—without reaching beyond technical fixes to the deeper wellspring of our behavior, attitudes, and worldview. Ironically, it was the historian who blamed biblical religion for the environmental crisis, Lynn White, who put his finger on the issue. In his famous 1967 article, "The Historic Roots of Our Ecologic Crisis," he wrote: "What people do about their ecology depends on what they think about themselves in relation to things around them. Human ecology is deeply conditioned by beliefs about our nature and destiny–that is, by religion. . . . Since the roots of our trouble are so largely religious, the remedy must also be essentially religious, whether we call it that or not. We must rethink and refeel our nature and destiny."[1]

Whether or not we agree that the roots of the crisis are religious as opposed to secular, ancient or modern, White deftly identified the issue as one of deeply held assumptions about the world, beliefs about our nature and destiny. What I would add is that these beliefs themselves are embedded in modes of thought. Religions are important to the environmental crisis because they literally shape our ideas, feelings, and attitudes.

I therefore propose that it is a worthy venture to mine our religious traditions for different ways of thinking, ways that can offer alternatives to the mode of thinking that currently reigns. As we must draw on the biodiversity of plant species in the search for medicines, so we need to draw on the diversity of cultures and ways of thinking about the world if we are to have the best chance of healing ourselves and our planet.

Modes of thought that overemphasize linear and reductionist approaches are one of the major roots of our current crisis. They have given the illusion of control over that which cannot be completely controlled, of growth without limits in a biological world that thrives within certain livable conditions, and they have created a distance between ourselves and the rest of creation. They give us the illusion of being masters over that of

which we are essentially a part, even if a special part.

Nonlinear, or what has come to be labeled in many scientific and social scientific disciplines "complex system" thinking, is more in harmony with the way the natural world itself is organized.[2] Not surprisingly, traditional modes of thought tend to follow these patterns as well. Judaism offers a particularly useful example of traditional thought because it is embedded in a world literary and religious tradition, thus bridging the gap between traditional and modern.

LINEAR VERSUS NONLINEAR THINKING

There are profound differences between linear modes of thought and nonlinear, organic, or complex system modes. These different modes of thought have important consequences for our relationship with nature. For example, the reigning mode of understanding economics is linear in that current economic theory holds that continual growth is not only possible but also the only way for the economy to succeed. In essence, the bigger, the better. This has many negative effects on the health of the world because biological and social systems are nonlinear, complex systems in that they rely on loops of information feedback: when any one element, as positive as it may be, reaches beyond a certain point, it becomes negative and the system takes steps to reduce it. Gregory Bateson said years ago, "There are no monotone 'values' in biology." That is, there is nothing in any living system about which one can say "the more the better." There is always an optimum point after which even the positive element becomes toxic.[3] A nonlinear mode of thinking will accept limits and value patterns of relationship that are essential to life systems.

Closely related to linear thinking is reductionist thinking. Because linear thought looks for straight lines of causation, it does not look at whole systems, with their multidirectional webs of causation, but rather seeks to understand by reducing phenomena to their smallest elements. Much current thinking in areas from science to economics and even humanities is reductionist, looking at the parts and not the whole. In agriculture, for example, there is a tendency to look for a "silver bullet" solution, which, as Wendell Berry noted, produces "solutions" that cause more problems. The solution to a desire for more economies of scale in raising cattle was the giant grain feedlot, which then causes disease in the animals, which is solved by massive use of antibiotics, which then causes health problems in humans and superstrains of bacteria, and on and on.[4]

Nonlinear thinking, or what Berry calls "solving for pattern," will seek to understand the interrelated factors in the health of the cattle, the grasses they naturally eat, the farmer and her community, the people who eat the meat, and other factors in order to solve problems without harming the pattern as a whole.

Related to this is the illusion of control. The linear systems such as the clocks, mills, and engines that René Descartes modeled his ideas upon, or the movement of planets that Galileo observed, are amenable to prediction and control (not planets, of course, but objects such as rockets, satellites, etc., that behave like them). The illusion of, and even the obsession with, complete control has many negative effects on our ecological and social world because biological, geological, and social systems are not amenable to prediction and control. Relying on feedback loops, such complex systems include most of the systems with which we interact: the weather, economic, political, agricultural systems. Today, bioengineers tinker with creating new organisms with an ideology of control that is appropriate to mechanical systems but that is recklessly dangerous when working with life.

Another closely related issue is emotional distance. Reductionism by definition takes things apart, dissects them, and kills them as living organisms in the name of understanding. While complex systems theory can be practiced by emotionally removed scientists as well, it does not put up the theoretical barriers to caring and empathy that reductionist thinking does. When one understands through seeing relationships, one need not remove oneself from the scene. The caring of the farmer for her farm, the intimate knowledge, as Wendell Berry pointed out, is a more useful and appropriate knowledge than the experts analyzing it from afar.[5]

Waste is another by-product of the linear and reductionist model. When one is looking to control and predict, there is a strong tendency to simply put anything that does not fit into your equations on the outside. When one looks only at the parts and not the whole, one does not "count" the waste.[6] For example, we use vinyl in many kinds of products, from house sidings to baby bottles. Looked at narrowly, it is a convenient, useful material that lasts a long time, does not need much maintenance, and is inexpensive. But if you look at the "life cycle" of vinyl, from the manufacturing stage to the disposal, the picture is different. It contains PVC, which produces dioxins in the manufacturing stages and which are released into the air if incinerated. Dioxins are very long lasting in the

environment and are associated with various cancers, immune-system disorders, and other negative health effects.[7] Including the "externalities" of manufacturing into the economic equation has long been a challenge for environmentalists who seek to keep corporations and governments responsible for their actions.

This admittedly one-sided account does not give credit to the many and important advantages to humanity that have come about through linear and reductionist thinking. Clearly the revolutionary changes in science, technology, and understanding of the world since the seventeenth century have benefited humanity. However, the overreliance on these modes has brought us to a place where all the benefits may come to naught because the essential ecosystems on which we rely are breaking down. Without vilifying these powerful modes of thought, it is time for the pendulum to swing in a more natural direction.

CHAOS AND THE RABBIS

The reception of nonlinear modes of thinking into Western culture has not generally been welcoming. Western-educated Jews in the eighteenth and nineteenth centuries faced a difficult task in defending the coherence and rationality of classic rabbinic literature, to which they may still have owed allegiance. Moses Mendelssohn (1729–1786), the leader of the German Jewish Enlightenment, defended this literature from attacks as being full of "inanities and eccentricities" and as "insipid rubbish."[8] The Talmud in this period was described as having a "primitive style" and an "alogical" manner of presenting ideas.[9] Mendelssohn essentially retreated into the idea that no coherent theology was to be expected from rabbinic Judaism, only "revealed Law."

Solomon Schechter (1847–1915) did propose that there was rabbinic theology but despaired of finding coherence in this theology. In his 1908 *Aspects of Rabbinic Theology*, he admitted that "the Rabbis were a simple, naïve people filled with a childlike scriptural faith, neither wanting nor bearing much analysis and interpretation."[10]

Other scholars have taken up this apologetic project in the twentieth century, but for my purposes I am interested in Max Kadushin (1895–1980). While he was in the tradition of defending the rabbis against the charge of incoherence, he did not assume the linear and reductionist model of understanding to be the only possible mode. Rather, he posited that there was indeed a different kind of coherence, an organic one,

which made sense of rabbinic literature and which, indeed, characterizes the folk thought of any society. Of course, Kadushin did not take these terms out of the air but was influenced by Alfred North Whitehead and others.[11] He was also in harmony with the developments in anthropology in the twentieth century, which also moved away from reductionist paradigms of explaining other cultures in favor of nonlinear structural and functionalist explanations.[12] But he was very much bucking the trend in modern approaches to Jewish texts, which was (and still to a large extent is) characterized by reductionist thinking in the form of *Wissenschaft des Judentums* [the Science of Judaism].[13]

Kadushin's writing was difficult and his textual explanations were sometimes overly rigid, and perhaps he was ahead of his time. His theories did not attract a large following or engender a robust literature in its wake. I am not coming to defend his particular interpretations or even his system of analysis; however, I believe that Kadushin's approach, whatever its failings, struck out on a fruitful direction, and it deserves reexamination in the light of contemporary developments. The particular method of interpretation that Kadushin conceived of is less important than the form of coherence that he identified. The "organic thinking" of the rabbis did not conform to Western ideas of coherence, but that did not mean it was chaos.[14]

This rabbinic story has an intriguing parallel in the history of "chaos" in twentieth century science. In the 1960s a climatologist named Edward Lorenz made a surprising discovery using the newfangled technology of computers. He was attempting to make a computer model of the weather, with the goal of finally bringing the kind of predictability to weather those sciences like physics had come to expect. He found, however, that weather did not conform to the laws of physics as they were understood. Knowing approximate initial conditions was supposed to be sufficient for predicting how a system would progress. A rocket, meteor, or planet hurtling through space will move predictably given the speed, velocity, and position at one beginning point. In his computer model of the weather, Lorenz discovered that it was not predictable. This initiated the new science of "chaos" because scientists found that, although complex systems such as weather could not be predicted in terms of the individual event, they could be understood in terms of statistical trends and regularities of the system as a whole. The oxymoronic term "chaos theory" expresses the puzzlement that scientists initially felt over the possibility of making sense

of things that they can see only as chaotic. Eventually the scientific world was able to expand its notion of sense, and by the 1990s chaos theory gave way to complex systems science. But it is important to note that initially the scientific world could not think of these systems as anything other than chaotic.[15]

It is instructive to look at another example of the infiltration of chaos into modern Western thought, this time from within. When modernist literary theories came into vogue, they were met with fear and resistance in many European and American circles. These approaches to texts seemed to threaten the foundational idea that we can communicate truth and the stability of meaning. But, according to literary scholar Chana Kronfeld, the Tev Aviv School of Israeli modernist writers and critics did not react in the same fearful way. She claims that this was based on their tradition of textuality going back through Hebrew literature. They never expected the same kind of foundational coherence that European thinkers did; they knew that texts are slippery: multivocal and polysemic, to use the terminology of literary theory.[16]

Jewish culture seems to have worked in several ways to bring nonlinear ways of thinking into the modern and postmodern world. Perhaps it is positioned to help us in finding the alternative modes of thought that can help us understand our relationship with nature in a new way.

ORGANIC THINKING AND THE TEXT

Nature and culture are not necessarily polar opposites, as we often characterize them. There are cultural modes, modes of thinking and understanding that work harmoniously with nature, and there is not anything backward, nostalgic, or unscientific about this. As noted, complex systems theory and the many related disciplines and terminologies (system dynamics, self-organizing criticality, NK landscapes, agent-based and multi-agent learning models, and many more) are quickly gaining acceptance in the hard and social sciences as well as in the culture in general.[17] Making the connection between these new scientific modes of understanding and ancient textual traditions that are still held in reverence and actively studied by thousands of adherents can accelerate a shift in our culture's mode of thought.

The spiral is a good example of a form that is used both in the natural, biological world and in the human cultural one. It is almost exclusively found in living, growing organisms such as seashells and trees, but it is

also found in architecture and in texts (whirlpools and spiral galaxies are the exceptions).[18] One fascinating aspect of Jewish and many traditional texts is that they can often be understood in terms of spiral, or chiastic, literary structures. There are several ways chiastic structures have been understood in literary theory, but one classic form (A – B – C – B* - A*) can elegantly express a spiral notion of time and a holistic, nonlinear way of seeing reality. This literary form does not move linearly from point A to point B. Nor does it simply circle back to the beginning. Rather, it expresses a movement that takes a reader through a text, returning in the end to something that invokes the beginning, but in changed form, and the reader is changed in the process of getting there. A is not the same as A*. This nonlinear quality of circling back, yet changing, is a characteristic of the chiastic literary form, and it is a mode of learning that is more in harmony with the rhythms of life than is the linear mode. This is demonstrated by Mary Katherine Bateson:

> Planning for the classroom, we sometimes present learning in linear sequences, which may be part of what makes classroom learning onerous; this concept must precede that, must be fully grasped before the next is presented. . . . Learning outside the classroom is not like that. Lessons too complex to grasp in a single occurrence spiral past again and again, small examples gradually revealing greater and greater implications. The little boy staring wide-eyed at the sacrifice of a sheep may one day be hajji, one who has completed the Meccan pilgrimage and seen the sacrifices and the Holy Cities and returned home looking at ordinary life differently.[19]

As a way of demonstrating this spiraling, nonlinear mode of thought as expressed in classic Jewish texts, I will analyze a chapter of the Mishnah, the first compilation of Jewish law dating from the early third century of the Common Era. Aside from the aforementioned aspect of following a more spiral-like form, I claim that this chapter of the Mishnah displays other characteristics of nonlinear thinking that I have discussed above as being more positive in framing our relationship with the natural world.

MISHNAH BRAKHOT: FROM DUSK TO THE DAWN OF REDEMPTION

Mishnah Brakhot, chapter 1, is the first chapter in the Mishnah, the earliest

compilation of Jewish Law and the foundation of the Talmud. I want to briefly look at this chapter as an example of the Mishnah as a whole and of rabbinic literature. While clearly there is a huge range of texts and genres in rabbinic literature, I believe that we can uncover some general characteristics using this chapter.

Mishnah Brakhot, chapter 1, consists of five *mishnayot* [separate, legal statements]. These can be read simply as a list of laws, more or less thematically organized, although with some puzzling exceptions and aberrations interrupting the thematic flow of the text. That is the standard, scholarly explanation of the composition of the Mishnah, and it relies on an assumption of linear organization. I propose that the Mishnah is more profitably read organically, as a complex system with nonlinear organization. When we do this, it becomes clear that the *mishnayot* are not simply discrete statements of law but are more like pieces of a puzzle or words in a sentence, forming a kind of narrative and touching on issues beyond their dry, legal content. The whole is greater than the sum of the parts.

MISHNAH BRAKHOT, CHAPTER 1

Mishnah 1

From what time does one recite the *Sh'ma* in the evening?

"From the time that the priests come in to eat their sacred gift-food, up until the end of the first watch"—these are the words of Rabbi Eliezer,

And the Sages say, "until midnight."

Rabban Gamliel says, "until the rising of the pillar of dawn."

There was an incident in which the sons of Rabban Gamliel came from the house of drink (after midnight).

They said, "We haven't recited the *Sh'ma*."

He said to them, "As long as the pillar of dawn hasn't risen, you are obligated to recite it."

And not only that, but every time the Sages said, "until midnight" the obligation actually continues until the rising of the pillar of dawn: (for example) the burning of (sacrificial) fat and limbs—their obligation goes until the rising of the pillar of dawn; all the (sacrifices) that need to be eaten in one day—their obligation continues until the rising of the pillar of dawn.

If so, why did the Sages say, "until midnight"?

In order to distance a person from transgression.

Mishnah 2

From what time does one recite the *Sh'ma* in the morning?

From the time that one can distinguish between tekhelet-blue and white.

Rabbi Eliezer says, "between tekhelet—blue and green. And finish saying it by sunrise."

Rabbi Yehoshuah says, "until three hours into the morning—because this is the way of the sons of kings, to get up at three hours into the morning."

One who reads (the *Sh'ma*) from then on (into the rest of the day) hasn't wasted his time, (but is at least) like someone who reads from the Torah.

Mishnah 3

The House of Shammai say, "In the evening everyone should recline and recite (the *Sh'ma*), and in the morning, (one should) stand (and recite it), as it is said, 'when you lie down and when you rise up'" [Deut 6:7].

The House of Hillel say, "Everyone should recite in his way (i.e., in any position he is in), as it says, 'as you walk on your way.'" [end of the same verse]

If so, (the House of Shammai would ask the House of Hillel) why does it say, "when you lie down and when you rise up."

(The House of Hillel would answer) "at the time when people lie down and at the time when people rise up."

Rabbi Tarfon said, "I was going along the way and I reclined to recite according to the words of the House of Shammai and I endangered myself on account of the highway robbers."

They (the other Sages) said to him, "You deserved the death penalty for transgressing the words of the House of Hillel."

MISHNAH 4

In the morning one blesses two (blessings) before (the *Sh'ma*) and one after it. And in the evening, two before it and two after it; one long and one short. In a place where they (the Sages) said to lengthen, one is not permitted to shorten; to shorten, one is not permitted to lengthen; to seal, one is not permitted not to seal; not to seal, one is not permitted to seal.

MISHNAH 5

One mentions the exodus from Egypt at night.

Rabbi Elazar ben Azariyah said, "Behold, it is like I am seventy years old and I never merited to understand the source for mentioning the exodus from Egypt at night until Ben Zoma creatively interpreted it:

As it says (in Deut 16:3) "In order that you remember the day of the exodus from Egypt all the days of your life."—"the days," teaches us to mention the Exodus in the days, "*all* the days" is to hint that we must mention it at night as well.

And the Sages said, "the days," teaches us to mention it in the day. "*all* the days" is to bring along the days of the Messiah.[20]

In its opening discussion of the first mishnah in this chapter, the Babylonian Talmud noted the basic chiastic structure of the chapter: "the *tanna* [the Mishnaic author] opened with evening, then went to the morning. When he finished with the morning, he returned to tell about the evening."

A Evening
B Morning
C Evening/Morning
B* Morning › Evening
A* Evening › Days of the Mashiach

In the above chart of the chiastic structure of the chapter, we can see that this entire chapter follows this pattern, not only returning to discuss the morning, but also coming back to the night at the end of the chapter. While the last mishnah begins with the night ("We mention the exodus from Egypt in the night"), the very end of the chapter moves us from the night to the day. However, note that the last line of the chapter speaks of the "days of the Messiah." The evening/morning or night/day cycle that is clearly the main structural frame of the chapter here hints at a larger meaning: the "night" that is mentioned here could also be referring to the darkness of exile, which will come to an end in the days of the Messiah. Rather than simply being a list of laws, this chapter may in fact be a map that the rabbis set for themselves, charting the way through the dark night of exile into the dawn of redemption.

Thus, this chapter of the *Mishnah Brakhot* may be interpreted along a strictly linear, reductionist approach, but that would lead us only to several laws concerning the saying of the *Sh'ma* at various times of day and night. When we approach the text as a complex system, a living system, if you will, the whole is greater than the sum of the parts, and a depth, subtlety, and aliveness appear that were not noticeable when we looked simply at the individual *mishnayot*.

One of the characteristics of ancient texts such as the *Mishnah Brakhot* or the Tanakh is that one often finds the end foreshadowed in the beginning.[21] In the case of this chapter of the *Mishnah Brakhot*, the first mishnah itself forms a microcosm of the entire chapter, moving from the dusk to the dawn. It does this by discussing first the times for starting the evening *Sh'ma* in terms of the *kohanim* [the priests], entering the Temple to eat their priests' due in the evening. As is noted in the Talmud's discussion of this mishnah, this is a seemingly unnecessary step back into the world of the Temple and the priests when a sign of the onset of night more convenient and close at hand (such as the stars coming out) would have been available to the editor. The end of the first mishnah again comes back to the Temple, choosing examples from the sacrificial cult to demonstrate the concept of a rabbinic fence: the Sages telling the people to stop at midnight when, in fact, the action is permitted until dawn. The first mishnah's structure of starting and ending with the Temple is another clue to the larger meaning in these *mishnayot* as referring to an arc of history, not simply the diurnal cycle.

It is interesting to note that, in the middle of the first mishnah, there

is a story about the sons of Rabban Gamliel who stay out late at night and miss the midnight deadline for saying the *Sh'ma* because they were at a *beit ha'mishteí* [a house of drinking]. The mention of the term beit, which is a form of the word *bayit* [house], a common rabbinic synonym for the Temple, can be an ironic reference to the Temple again, this time, however, by way of contrast: in the dusk they remember the Temple, and in the dawn they hope to see the redemption and the rebuilding of the Temple, but in the darkness of night, the "house" has become a house of drinking, disorientation, and the dangers of losing one's way.

MISHNAH 1: MICROCOSM

Evening (Temple)

Midnight (house of drinking)

Dawn (Temple)

Once we have seen the basic chiastic structure of this chapter, moving fom night to morning and back to night (with a hint toward the "new dawn" of redemption), we can reread the chapter with attention to the details of the progression that takes place within this arc. There is a return to the beginning, but not before there has been progress and change. In the case of this chapter, I interpret the change as having to do with the balance of creativity and tradition.

In the first mishnah, one looks almost passively back at history, the Temple, and the distant stars to find orientation in time. The second mishnah is very similar in form to the first, but the emphasis is shifted toward human discernment. The time when one can distinguish the colors of dye in a wool garment now gives us the limits of "morning." And significantly, the end of the second mishnah introduces the idea of Torah. Saying the *Sh'ma* even outside of its appointed time is not a waste of time. It is at the very least the praiseworthy deed of studying Torah. The beginning of Torah is after all discernment. This second mishnah thus leads us from the first mishnah, with its emphasis on looking toward the natural world to find orientation, to the third mishnah, where the focus shifts inward.

The third mishnah shifts into a different mode of orientation. No longer are we looking outward into the skies or even at the colors around us; the point of orientation has now become the text of the torah. This is the first time that the verses upon which the first two *mishnayot* were clearly based appear. This mishnah uses the word *derekh* [path, road] three

times, and it seems to be a key word here. The rabbis have found their path through the exile: the text will be their compass. However, we note a dark cloud at the edge of this triumphant center of the chapter. The story of Rabbi Tarfon being attacked by highway robbers and the extreme reaction of the Sages, that he deserved death because he transgressed the words of Hillel, signal the limits of the newfound creative path of the rabbis. When one is building a society and a religious culture on the texts, when textual interpretations become the essential point of orientation for a group, the risk of fragmentation and dissolution is high. The one who strays even a little from the authority of the group's discipline endangers not just himself but the whole group. There are in this mishnah the seeds of tension between creativity and authority.

If we saw the seeds of this tension in the third mishnah, it has grown to a full-blown crisis in the fourth mishnah. Here we again have a text as the point of orientation, but this time it is a text that the rabbis or even a non-rabbi might create: the blessings in the liturgy before and after the *Sh'ma*.[22] The fourth mishnah thus offers an opportunity for creative human expression not yet seen: not only do we interpret texts, but we also create our own. But this mishnah takes away with one hand what it offers with the other when it goes on to stipulate that one must compose these blessings only exactly as the Sages have directed, not to lengthen when they say to shorten, and not to shorten when they say lengthen. The tension between creative expression and rabbinic authority is at its highest level in this mishnah. It is left to the last mishnah to resolve this tension.

The fifth mishnah brings history back into play by opening with "one mentions the exodus from Egypt at night" as well as ending with "the days of the Messiah." But it also weaves in textual interpretation. The story of Rabbi Elazar ben Azariah's frustration at finding a textual source for the law is resolved by Ben Zoma's *drash* [creative interpretation]. The appearance of this word marks a new kind of creativity: interpreting the biblical text, but with the inclusion of one's creative powers of imagination. This, I would argue, is the rabbis' resolution of the tension building up in the last two *mishnayot*. If one is faithfully interpreting the tradition, bridging the gap between contemporary practice and the textual source, one may use all one's creative powers without fear of contradicting rabbinic authority. It is the other opinion, that of the Sages, that brings in the "days of the Messiah," but literarily the redemptive moment is brought in by Ben Zoma. The Sages' opinion is left as the dramatic ending, even though it is

not the accepted answer. Below is a chart of the chiastic structure of the chapter along the lines that I have described:

A History (Temple), Nature
B Nature (Human discernment hints to torah)
C Texts - Torah/Rabbinic Authority
B* Texts-Human (creativity and authority in conflict)
A* History/Texts/Redemption (creativity harmonized with authority)

Some of the characteristics of nonlinear or complex system thinking that are demonstrated by this analysis of a chapter of the *Mishnah Brakhot* include the fact that one needs to read it as a whole. Exactly as one would miss the beauty and awesome subtlety of a forest ecosystem regulating its temperature, energy, moisture, and population if we simply looked at an individual tree, one needs to read this chapter as a whole in order to gain the insights beyond the surface laws.[23] In fact, one needs to employ a kind of feedback loop in the form of the "hermeneutic circle," reading first the parts and then grasping the whole, which enables us to return to the parts with a new understanding.

Another characteristic of this approach is openness of interpretation. My interpretation does not claim to be the single "answer" to the text; rather, it is one (hopefully strong, convincing, enlightening) interpretation, based on a set of comparisons and juxtapositions within the text. This tends to keep the text alive and interesting. In contrast, when one reductionistically explains away the text by way of the underlying economic, political, or sociological forces at play, one can get important information, and it certainly gives us a sense of power over the text, but as in our relationship with nature, dissecting kills the subject. The subtle interplay of relationships within the text may be lost in the analysis.

Two other characteristics that have been noted for complex systems are also relevant here: embeddedness and fuzzy boundaries. Embeddedness refers to the quality of systems embedded within larger systems. The mitochondria live within the cell, which is within the organ, within the organism, within the ecosystem, and so forth. These independent and interdependent systems are separated by fuzzy boundaries through which information can pass while still maintaining the integrity of each individual system.[24]

Similarly, we saw that the first mishnah formed a microcosm of the chapter as a whole. The chapter is embedded in a tractate, within an Order,

within the Mishnah, within rabbinic literature, and so on. One can choose to juxtapose items only within this chapter, but one could also choose to compare an item with something outside, sharing information, as it were, with other parts of the Mishnah or of rabbinic literature. This kind of juxtaposition is the stock in trade of traditional rabbinic analysis, and it creates openness to the interpretation that contrasts to the reductionist idea of finding the one answer. In texts, contexts can change, meanings shift, and one never has complete control, but the process is dynamic. According to modern and postmodern literary theory, all texts possess this quality of openness and shifting contexts, but the classic Jewish textual tradition has especially embraced it.

CONCLUSION

One of pioneer environmentalist David Brower's favorite stories involved a member of the Cree tribe who was brought into a court to testify in a case involving the damming of a river and the flooding of his land. This man, who may never have been in a building before, much less a courtroom, was asked to swear to tell the truth, the whole truth, and nothing but the truth. He replied that he could not tell the truth. As a human being, all he could possibly do was tell what he knew.[25]

Of course, when I heard this story it reminded me of a famous midrash in which God is undecided whether or not to create humans. Truth, Peace, Kindness, and Righteousness all line up on different sides. The heavenly court is deadlocked. Because they can reach no decision, God steps in to break the tie by throwing Truth out of heaven and down to earth. God then proceeds to create humans. The prooftext is Psalms 85:12: "truth will grow from the earth."[26]

Both stories make the point that we who live here on earth cannot grasp for ultimate truth in the sense of complete knowledge or complete mastery. The mode of thought that we have become accustomed to in the modern period has all too often tempted us with this illusion of mastery. Mastery is a powerful vision and not one that our culture will easily give up on. The environmental movement needs to offer more than doomsday predictions, scolding, or even technical fixes to solve our problems. It needs to offer (to return to my starting point of Lynn White's analysis) an alternative, equally powerful vision of our life, destiny, and place in the world. We have seen how modern science has begun to shift toward more effective ways of thinking about the natural world that take into account

nonlinear, complex systems. But it is not the job of scientific disciplines to create guiding visions of life and deep assumptions about our place in the world. When they do they stray into the realm of religion, ideology, and culture.

I have offered here the suggestion that, when placed alongside these new scientific modes of understanding, Jewish textual practice may be one place to start building the foundation of an alternative vision of our place in the world. I suggest that this vision is no less powerful and exciting than the vision of mastery. By relinquishing mastery, one gains dynamism, flexibility, involvement, and harmony. Understanding by putting things together rather than tearing them down, we can bring life to ourselves and the world. This mode of understanding is well expressed in the following midrash, with which I conclude:

> Ben Azzai was sitting and learning and there was fire all around him. The other students went to Rabbi Akiva and told him. He came and said to him, "I hear that you were learning and fire was all around you." He answered, "Yes." He said, "Perhaps you were dealing with (the secret mystical text) the Chambers of the Chariot?" He answered, "No, I was sitting and stringing together words or Torah, and from the Torah to the Prophets, and from the Prophets to the Writings, and the words were as joyous as on the day they were given on Sinai, and as sweet as when they were new.[27]

NOTES

[1] *Science 155* (1967): 1203–07. Quoted in Jeremy Benstein, *The Way into Judaism and the Environment* (Woodstock: Jewish Lights Publishing, 2006), 14.

[2] Tom Wessels, *The Myth of Progress: Toward a Sustainable Future* (Hanover: University of New England Press, 2006), 1-21.

[3] Gregory Bateson, *Mind and Nature: A Necessary Unity* (New York: Bantam Books, 1979), 59.

[4] Wendell Berry, "Solving for Pattern," in *The Gift of Good Land* (New York: Straus, Farrar and Giroux, 1981), 134–45.

[5] Ibid., 143.

[6] Natan Margalit, "From Waste to Wonder: Steps to an Ecology of Living," *Tikkun* 19:4 (July/August 2004): 68-72.

[7] Judith Helfand, *Blue Vinyl*, documentary film, 2002. http://www.judithhelfand.com/films.html.

[8] Simon Greenberg, "Coherence and Change in the Rabbinic Universe of Discourse: Kadushin's Theory of the Value Concept," in *Understanding the Rabbinic Mind: Essays on the Hermeneutic of Max Kadushin* (ed. Peter Ochs; Atlanta: Scholars Press, 1990), 20.

[9] Ibid., 21.

[10] Ibid., 22. This from a defender of the rabbis!

[11] Theodore Steinberg, "Max Kadushin: An Intellectual Biography," in *Understanding the Rabbinic Mind: Essays on the Hermeneutic of Max Kadushin* (ed. Peter Ochs; Atlanta: Scholars Press, 1990), 5.

[12] Natan Margalit, "Life Containing Texts: The Mishnah's Discourse of Gender, A Literary/Anthropological Analysis" (Ph.D. diss., University of California, Berkeley, 2001), 72–80.

[13] I thank my friend and colleague at Hebrew College, David Starr, for pointing out that *Wissenschaft* was not only reductionist but also had its organic side in the form of the Romantic ideal of an evolving culture.

[14] "Organic Thinking" is the title of one of Kadushin's major works: Max Kadushin, *Organic Thinking: A Study in Rabbinic Thought* (New York: The Jewish Theological Seminary of America, 1938).

[15] Wessels, *The Myth of Progress*, 2-4.

[16] Chana Kronfeld, *On the Margins of Modernism* (Berkeley: University of California Press, 1996), 122. She also confirmed this interpretation in a personal communication.

[17] Benyamin Lichenstein, "A Matrix of Complexity for Leadership: Fourteen Disciplines of Complex Systems Leadership Theory," in *Complex Systems Leadership Theory* (ed. James K. Hazy, et al.; Boston: ISCE Publishers, 2007), 322–23.

[18] Bateson, *Mind and Nature*, 12. He refers his readers there to the Fibonacci series, or the "golden section" for the mathematical basic for finding these spirals in art, architecture, flowers, and many other natural and cultural forms.

[19] Mary Catherine Bateson, *Peripheral Visions* (New York: HarperCollins, 1994), 30–31.

[20] *BT Brakhot* 2a. My translation, based on the Hebrew text in printed editions of the Mishnah.

[21] Mary Douglas, *Leviticus as Literature* (Oxford: Oxford University Press, 1999), 47-51.

[22] This point, and the basic interpretation of the next mishnah as well, I originally

heard from my teacher Rabbi Dov Berkowitz. Unfortunately, I have taught this chapter so many times over the past fifteen years or so that I do not remember which points were original with Rabbi Berkowitz and which are my inventions. It is safe to assume that the good points are his and the weak ones are mine.

[23] Wessels, *The Myth of Progress*.

[24] Ibid., 9.

[25] I thank my friend, environmental activist and educator David Ziv-Kreiger, for relating this to me and for helping me think about this conclusion. Ziv-Kreiger was David Brower's assistant in the early 1980s.

[26] Genesis Rabbah 8:5. My paraphrase.

[27] Song of Songs Rabbah 1. My translation.

From the Desert to the Sown: Israel's Encounter with the Land of Canaan

Gary A. Rendsburg

In the year 1908 BCE, an Egyptian courtier named Sinuhe, fearful of palace unrest upon the death of Amenemhet I (the founder of the Twelfth Dynasty), fled his native land into the Sinai Desert and beyond.[1] And while a peaceful succession brought Senwesret I (the son of Amenemhet I) to the throne,[2] by this point Sinuhe was miles from home and on his way to the land of Canaan. Upon his arrival in the land (called the "land of Yaa" in the text), Sinuhe marveled at the produce to be found there:

> It was a good land, its name was Yaa.
> Figs were in it, together with grapes,
> Wine was more abundant than water,
> Honey was great, plentiful was its plant-oil,
> All kinds of fruit on its trees,
> There was barley, together with wheat,
> Without limit cattle of every kind.[3]

We will return to these lines in a moment, but first let me say more about the story of Sinuhe, from which the above summary and the direct quotation are taken. The story is known to us from two major manuscripts, both housed in the Berlin Museum, along with almost thirty other fragmentary copies in assorted collections around the world.[4] The number of copies found, dating from both the Middle Kingdom and New Kingdom periods, informs us that the story of Sinuhe was the most popular piece of literature in ancient Egypt. The composition is a work of literary fiction, though it is based on the reality of the (short-lived) political unrest during the transition from Amenemhet I to Senwesret I (c. 1908 BCE). If I have introduced the story as if there were a real Sinuhe whose actual words are recorded in the manuscript, it is for the dramatic effect that is produced thereby. In truth, of course, all we have is the account in Sinuhe's first-person voice, written by a master storyteller sometime during the reign of Senwesret I (1918-1875 BCE). The text that he produced, as noted above, became the most popular story narrated by ancient Egyptian bards.

To set this tale within the greater context of ancient literature, let me note