

## **Water and Sand: The Dialectic of Entropy and Negentropy in Kobo Abe's *The Woman in the Dunes***

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### **Abstract**

This study interprets Japanese novelist Kobo Abe's *The Woman in the Dunes* in terms of the interplay of water and sand, taken now as a dialectic of disorder and order, entropy and negative entropy (negentropy). The protagonist Niki is entrapped not only by nature, symbolized by the encroaching sands, but by society: he is subjected to forced labor and to thirst by a community itself overtaken by moral and social entropy or dissolution. Thus he seems to embody an even greater dissipation of energy, a more encompassing disorder, homogeneity, stillness, disintegration and sense of death. Yet when Niki discovers water in the sands he unexpectedly acquires a vital negentropic energy, a life-energy. Water saves and sustains him and becomes the progenitor of his new self, the symbol of his rebirth. A new life now begins for him in the sand-entrapped community. However, while chaos theory describes the self-organizing of disorder and its deep structures of order, chaotic systems are also prone to unpredictable fluctuations and bifurcations. The same is true of Niki's new life, and the novel has an uncertain, radically open ending, one that befits all chaotic systems. It also befits water and sand and Abe's protean self, in all their fluidity.

### **Keywords**

Japanese literature, Kobo Abe (1924-1993), *Suna no onna* (1962),  
*The Woman in the Dunes* (1964), water and sand, thirst, rebirth,  
entropy, negentropy, chaos theory

What is of all things most yielding (water)  
Can overwhelm that which is of all things  
most hard (rock).  
Being substanceless it can enter even where  
there is no space;  
That is how I know the value of action that is  
actionless.

—Laozi, *Daodejing* 43, Waley 197

There was a woman...there was sand...there  
was an empty water jar...there was a drooling  
wolf...there was a sun.

—Kobo Abe, *The Woman in the Dunes* 125

The Japanese modernist writer and critic Kobo Abe is best known for his novel *Suna no onna* 1962, which was translated in 1964 as *The Woman in the Dunes*. It is set in a seaside village where Niki, a teacher and amateur entomologist, is held captive with a young woman at the bottom of a sand pit. The villagers have given both of them the endless task of shoveling out the wind-blown sand that threatens the village with destruction.

Various critical views have emerged since the publication of Abe's masterpiece. David Pollack sees the novel as "a critique of the fate of the traditional rural village in modern, capitalist Japan. These poor farmers and fishermen have been abandoned by the state, which has given up on the impossible task of preventing the constantly encroaching entropic sand from swallowing up their fields and home . . ." (128). The novel is also said to be symptomatic of the universal modern condition. It recaptures Kafka's fictional world dominated by the tyranny of the unknown (Miner 32); it presents something like the barren landscape of Beckett's absurdist drama (the virtually blank stage as the curtain opens in *Waiting for Godot*) and alienated characters, or an existentialist sense of essences that are created despite the absurdity of existence. Abe's work rehearses the myth of Sisyphus, the Greek mythic figure condemned by the gods to repeat eternally the task of rolling a stone up to the top of a hill only to see it roll back down before reaching the top. In facing up to the lack of purpose in his life of continual yet meaningless striving, Sisyphus wrested human dignity from nothingness.<sup>1</sup>

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<sup>1</sup> Kafka's "imperial messenger" in "The Great Wall of China" moves with such infinitesimal (or infinite) slowness that this is really no motion at all; it almost seems to have become reversed, an infinitely slow movement in the opposite direction. Either way it becomes an infinite delay or temporal suspension, like that of Beckett's characters who are forever "waiting" or Heidegger's state of extreme boredom in *An Introduction to Metaphysics* (1-6). In this state we become aware of nothing but time itself, and thus of the nothingness of things: suspended in this state we ask in

However, I would like to suggest a more contemporary, chaos-theory-based reading of this novel. It seems to me that Abe's narrative easily fits the contours of the scientific concept of entropy and its equivalent in the popular imagination. The second law of thermodynamics speaks of entropy, the heat energy that fails to manifest itself in another form and that has been dissipated in a closed system, i.e. in a system that does not interact with its surroundings. Entropy also means the disorderliness of a system that "has lost its contrast, its orderly arrangement which gave it potential for performing some definite task" (Campbell 35). As I see it, then, the novel can be regarded as the microcosm of a world-in-sand that parallels society/the world/the universe. In the closed system of this world, entropy is embodied by the natural elements of sand and water. The protagonist's entrapment in a demonic Japanese rural setting of encroaching sands, and his subjection to thirst and inevitably to the fear of death by a community befallen to moral and social entropy, lead to a still greater entropy—thematized as dissipation of energy, disorder, homogeneity, stillness, disintegration, absence of information, irreversibility and death, the characteristics of an entropic universe. The novel also delineates the entropic life of post-war Japan, and perhaps by extension the globalized entropy of our nihilistic postmodern society, one that is arguably moving, through its increasingly repetitive and redundant flows of information, toward the entropic terminal equilibrium of blank non-communication and meaninglessness that is also known as information death.

Of course, the other side of entropy is negative entropy or negentropy, "the counterpart of entropy and the measure of the order of a system or the amount of information contained within it" ("Negentropy"). For the modern science of chaos theory sees order and disorder as two sides of the same coin: disorder possesses deep structures of order<sup>2</sup> and self-organizes into order<sup>3</sup> (the "negentropic" process). Still, at a certain point order can also disintegrate into disorder (the entropic dynamic). This chaos-theory perspective can help us see the protagonist Niki's unexpected discovery of water in the sands in a positive light: now he acquires a

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effect, "[w]hy is there anything at all and not rather nothing?" (Heidegger 1). Sisyphus' rock that keeps rolling back down the mountain enacts the reversal-of-direction on a larger scale which comes finally to the same thing: stasis, standing still, going nowhere. Camus in "The Myth of Sisyphus" says: "If this myth is tragic, that is because its hero is conscious," by which he means Sisyphus is conscious that his is a futile project, futile because it is never-ending and infinitely self-repeating (89). For "[w]here would his torture be, indeed, if at every step the hope of succeeding upheld him?" It is an "absurd fate" and yet because "[h]is fate belongs to him . . . [a]ll Sisyphus' silent joy belongs to him" (89-91).

<sup>2</sup> See Gleick.

<sup>3</sup> See Prigogine and Stengers.

vital negentropic energy that leads him to the creation of a new self and new life in the sand community. Here I will interpret the sand, then, as a real natural force (as well as novelistic image and theme), in effect the force of entropy, and its counterpart, water, as a life-creating and life-sustaining force, and thus (symbolically) Niki's progenitor, his rebirth.

Hence, in this essay I will explore the complex dialectic of entropy and negentropy that organizes Abe's novel, and show how this dialectic is engendered by the multifarious properties and effects of water and sand. This interplay and interaction of opposite forces finally results in an unstable synthesis at the novel's end. Yet such instability is typical of chaotic systems, which by definition are made up of fluid and ever-shifting elements like water and sand, human nature and society, the protean self.

### **Water, Winds, and Sand: Entropy and the Arrow of Time**

Water and sand pervade the setting of the novel and the thoughts of the characters, determining Niki's actions. These natural elements, as I hope to demonstrate, stand for the destructive power of nature and the tyranny of a society that subjugates the individual. Sand and water, separately or woven together, in one form or another, not only represent but generate the entropic form or "field" of the novel.

Water currents and blowing winds bring the sand with its potential for disintegration, destruction and death: "As long as the winds blew, the rivers flowed, and the sea stirred, sand would be born grain by grain from the earth, and like a living being would creep everywhere. The sands never rested. Gently but surely they invaded and destroyed the surface of the earth" (Abe 14). Though Niki the entomologist views sand as a respectable mineral that has a preservative function, he acknowledges that all living things, even bacteria, are unable to endure life in the sand because of its violent and ceaseless movement. Sand is inhospitable to all living things; it is not suitable for life. When Niki examines the woman's house he notices that "its insides were half eaten away by tentacles of ceaselessly flowing sand. Sand which didn't even have a form of its own—other than the mean 1/8-mm diameter. Yet not a thing could stand against this shapeless, destructive power" (Abe 31).

Niki's companion in captivity also affirms the entropic effect of sand, even as she uses it to clean the dishes. She informs Niki that the houses in the village are undergoing a process of physical disintegration and even sometimes collapse as a

result of its piling up: “[H]e remembered the words of the woman the night before—to the effect that the sand was never dry but always moist enough to cause the gradual disintegration of anything it touched . . .” (Abe 55). This collapse can be interpreted as the equivalent of what Rudolph Arnheim calls the catabolic effect, the “wear and tear,” the category of various agents and events that grind things into pieces and that lead to the disintegration of structure (26). Such an effect increases with the passage of time if the villagers stop shoveling, and becomes irreversible when typhoons hit the village: “At times like that, you can’t ever catch up with the sand no matter how much you shovel” (Abe 29). This suggests Sir Arthur Eddington’s “arrow of time” and its irreversibility: “The increase of disorder or entropy with time is one example of what is called the arrow of time, something that distinguishes the past from the future, giving a direction to time” (Hawking 153).

Nature reveals its destructive power in the course of cataclysmic events. The random occurrence of typhoons has its toll not only on physical objects but also on the living. Niki also learns from the woman that the thundering down of sand like a waterfall has led to the death and burial of her husband and her little girl. This piece of information leads him to muse in a hallucinatory manner on sand’s destructive effects on ancient cities and civilizations: “The same sand currents had swallowed up and destroyed flourishing cities and great empires. They called it the ‘sabulation’ of the Roman Empire, if he remembered rightly. . . . Yet, after all, they too were unable to resist the law of the flowing 1/8-mm. sands” (Abe 41). This entropic force has a pattern typical of chaotic systems, that of the recursive symmetries of Mandelbrot’s fractals, i.e., symmetries that repeat themselves across various scales such as tree/branch/twig (Braun 201). In Niki’s reflection here the scales include house/village/city/empire.

Early in the novel, the images of encroaching entropy are concealed. Life in the village, like life in chaotic systems, conceals its potential disorder behind an eerie facade of order. Abe presents a picture of a community that refuses to openly acknowledge the imminent threat of the falling sands. A sense of mystery hovers over the village. This eerie presence of an order that conceals a certain disorder also permeates the daytime. The images of children playing conceal the danger that constantly threatens the village and its inhabitants: “The ordinary normal world was outside, where children played, kicking stones along the roadside, and where roosters proclaimed the end of night at the proper time” (Abe 82). Niki, unaware of the disorder lurking behind what seems to be a normal village life, naively falls into

the trap set by the villagers: “He had been lured by the beetle into a desert from which there was no escape—like some famished mouse” (Abe 50).

### **The Sand Community: Negentropic Measures and Entropic Patterns of Life**

The silent entropic force of the sand gives rise to a drastic change in the villagers’ lives. They attempt to halt time’s arrow and to save the village from destruction, setting up a kind of stable tension between the destructive forces of nature and the human negentropic constructive forces. The villagers establish a system which includes the nightly shoveling the sand and the distributing of cigarettes, newspapers, and water—as there is no “natural” water to be found. In terms of chaos theory, one could say that the deterioration of the situation in the village is a system-shattering moment, one that pushes the inhabitants of the sand community to jump to a new level of order and organization. It is true that life in the village is subject to the random effect of the sands. Yet, like any potentially chaotic system, the human community comes to negate real randomness with the negentropic measures taken by an old villager and his four companions.

Paradoxically, these villagers’ leap to a new level of organization is also a leap, in Niki’s view, to an increased level of (potential) entropy. For one thing they have now become agents of moral entropy, of a move in the direction of moral degeneration. Since the government cannot find a solution that would halt the disintegration of the village, it has incarcerated a number of young men and forced them to help with the tedious task of sand-shoveling. This in turn has prompted many of the young men to leave the village, escaping the hopeless, Sisyphean duty of constant shoveling and thus abandoning the village to an even greater sense of vacancy. Such a vacuum or sense of vacancy brings to mind the cosmological conclusions drawn from the second law of thermodynamics: not only is it true that “within a finite period of time past, the earth must have been, and within a finite period of time to come the earth must again be, unfit for the habitation of man” (qtd. in Jammer 113), but the universe is moving inexorably toward a state of eternal rest as a result of the dissipation of all available energy and its transformation into heat at uniform temperature (Jammer 115). We see the “moral entropy” of those villagers who have stayed in the village, then, in their numb insensitivity to the suffering of the detainees. We also see it in the shameless selling of cement, used for construction, which is mixed with sand in order to make the “cement” lighter and reduce the hauling charges. This practice can only lead, of course, to the

collapsing of houses, thereby further undermining the moral integrity (or “foundation”) of the community, undermining its collective effort to reverse the entropic flow and save itself from extinction.

Moving beyond the moral sphere it is also clear that, in effect, the village’s negentropic collective “task” results, as if through a sort of dialectical reversal, in further entropy, further disruption of the daily normal life of villagers. For they must now work at night when the moisture level of the sand is higher—“the sand is easier to work with at night because it is damp” (Abe 35)—thus establishing a change in “village life” itself, in the essential temporal or diurnal rhythm of that life. There is a contrast between people’s passivity during the day and their activity during the night: “He could hear the sound of the wind sweeping over the edge of the hole . . . the lisp of the shovel cutting into the bed of wet sand . . . the distant barking of dogs . . . the faraway hum of voices, trembling like the flame of a candle. The ceaselessly pouring sand was like a file on the tip of his nerves” (Abe 93).

This collective task of clearing away the wind-blown sand also obliterates differences between people, which while it might seem to suggest equality and democracy also suggests disorder. Order is based on differentiation, but now the only apparent hierarchical “difference” seems to be that between the old man who oversees the task of shoveling and everyone else. Life in the village increasingly tends toward the erasure of the individuality of each person who joins the group, willingly or otherwise: the group now absorbs all individuals into its indeterminate, sand-like mass. The villagers are never referred to by their names; they become anonymous like the social whole, mere mindless instruments serving the common goal of group survival, of saving the village from annihilation. If entropy is defined as “a state of inert uniformity of component elements: absence of form, pattern, hierarchy, or differentiation” (Lewicki 71), then this is a state of social entropy where the common goal of group survival, manifest only in the uniformity of motion and movement, becomes indistinguishable from the entropic driving force toward the frozen state of terminal equilibrium. Tony Tanner, commenting on some insights of R.P. Blackmur, explains that uniform motion and mechanical order induce anesthesia and ultimately an irreversible torpor, i.e., the running down of things. He concludes that “[o]ne of the paradoxes of this [entropic] tendency is that of movement leading to stillness. But, there is a difference between the organic, constructive movement of something (or someone) burgeoning into a full realization of its inherent potential development; and the sort of mindless repetitive motion . . . that denotes inertia and death” (7).

## Niki and the Entropy of Life

Niki establishes a dichotomy between life in the city and life in the village. He believes that city life is essentially entropic, while his vacation in the village will allow him to regenerate order out of his chaotic life, at both the professional and the personal level, back in the big city. Clearly his life as a teacher has left him with feelings of dejection, loneliness and worthlessness. As for his personal life, Niki has had an “obscure” relationship with a woman, one leading, once again, to inertia and a frozen passion: “It would be false to claim that there was absolutely no love between him and the other woman. It was simply that theirs was a somewhat obscure relationship in which, mutually at odds as they were, he could never be sure of her” (Abe 100). Such doubt could suggest a particular psychological or existential state, or it could suggest the statistical, probabilistic, information-theory-based perspective whereby increased entropy correlates with both a higher number of possible arrangements (or “decisions” or “courses of action”) and a lower amount of information that can possibly be gained about (any or all of) these arrangements (Lewicki 90).

Niki comes to the village, then, in order to protect himself from this “outer entropy” of life back in the big city, the modern metropolis: “In fact, his involvement with sand and his insect collecting were, after all, simply ways to escape, however temporarily, from the obligations and the inactivity of his life” (Abe 40). This inactivity or lethargy is, in the language of entropy, “bound energy” that cannot accomplish any useful work. Accordingly, his temporary vacation in the remote village as Niki first envisions it can be interpreted as a localized island, isolated both spatially and temporally from the “outer entropy.” It is for him an enclave that has so far managed to overcome the general drift towards disorder and death. For as Norbert Wiener says of the second law of thermodynamics, in *The Human Use of Human Beings: Cybernetics and Society*, while it may be a valid statement about the whole of a closed system it is definitely not valid concerning a non-isolated part of that system; such parts are like local and temporary islands of decreasing entropy in a world whose entropy as a whole tends to increase, and the existence of these islands enables some of us to assert the existence of progress (36).

However, after his entrapment Niki learns, in a very painful manner, that entropy is after all ubiquitous. He gains a new awareness of the futility and vanity of human life, wherever it is lived. That is, he ironically comes to discover that his cherished life in the village is also essentially entropic. On a larger scale, he comes to see that life in Japan—“Japanese life”—is also entropic. A muffled voice coming

to him from the mist catalogs the abnormalities of people and of life in Japan and assures him that “there would be statistical proof that humanity is one hundred percent abnormal” (Abe 218). In other words, Niki comes to discover, in part by his experience in the village and his reading of the village newspapers, that life itself has no meaning. In a moment of sudden illumination he sees that there isn’t a single item of importance in life, that life is nothing but “a tower of illusion, all of it, made of illusory bricks and full of holes” (Abe 94). Elsewhere in the novel the same nihilistic and entropic perspective, one that reduces life to a sort of illusory game, is presented by Abe through his protagonist Niki. Once again we see that the novel exemplifies a pattern typical of chaotic systems, namely, the recursive symmetries of fractals that repeat themselves across various scales. Just as the effect of the sand is entropic as measured on or against the scales of house, village, city and empire, the meaninglessness of all human activity permeates village, city, and life.

### **Sand, Dampness and the Penury of Water: The Entropy of the Self**

The invasion of the sands, the lack of water, Niki’s entrapment and the treatment of the villagers lead to his metamorphosis at the physical, mental and emotional levels. This mainly means a state of increased entropy at all levels. However, paradoxically, Niki’s life after a relatively long sojourn in the village also leads in an unpredictable manner, as in chaotic systems, to an unstable emergence of order out of chaos.

Niki undergoes an inexorable dissipation of energy as a result of the direct and powerful effect of the sand and of the villagers’ rationing of the water. He is thrown into an inferno of sand. Sand clings to him like some crafty animal and accumulates on his face, head, and chest and in his throat. As his body loses its moisture, he steps down to the earthen floor in search for water: “A red metallic film floated on the thimbleful of liquid remaining in the bottom of the water jar. But even that was better than the enduring sand in his mouth” (Abe 31-32). His skin, puffy from sand and perspiration, becomes inflamed. Dirt covers his body, leading to the degradation of normal (big city, civilized) standards of life: “They say the level of civilization is proportionate to the degree of the cleanliness of the skin” (Abe 122). The entropic effect of the sand on his body continues its way inward and infiltrates his soul. Because of the sand, Niki is drained of his vital energy; sand even clings to his skin, seeps into his veins, and from the inside undermines his resistance (Abe 34). He is inflicted with a profound lethargy, and “[l]ooking at the sand wall that

encircled him as if to strangle him, he was unpleasantly reminded of his miserable failure to scale it. He had simply floundered about. A feeling of impotence paralyzed his whole body” (Abe 51-52). This feeling of impotence, which is repeated throughout the novel and which is usually expressed via animal imagery, is imbued with cosmic connotations: “He wanted to believe that his own lack of movement had stopped all movement in the world, the way a hibernating frog abolishes all winter” (Abe 54).

At this stage in the narrative, water is depicted as a negentropic element that would bring him relief. It would quench his thirst, restore the moisture to his dehydrated body and cleanse it. In fact, as soon as the water jar is replenished, he rinses his mouth and washes his face. Not only does he regain a feeling of well-being but also acquires a keen awareness of the power of water: “When he had rinsed his mouth and washed his face he felt better. . . . Water was an inorganic substance like sand, a simple, transparent, inorganic substance that adapted to the body more readily than any living thing” (Abe 44). Not only is the dissipation of his energy physical, as is evinced by the numerous references in the novel to lethargy and physical fatigue, but it is also a moral and intellectual dissipation, bringing about the disintegration of his personality. This disintegration is a physical metamorphosis driven by the strenuous and hopeless task of clearing away the sands. It is also a spiritual metamorphosis brought about by his loss of freedom, his entrapment within walls of sand, and intensified by the dehumanization he is subjected to by the villagers: “He was not a horse or a cow; they could not force him to work against his will. Since he was useless as manpower, there was no sense in shutting him up within these walls of sand” (Abe 51). This dehumanization is comparable to the entropic dissipation of vital energies, and even reaches the level of objectification in “[a] world where people were convinced that men could be erased like chalk marks from a blackboard” (Abe 67). Lewicki explains that “objectification can lead to entropy, particularly if the very quality of being human is involved” (86).

Niki’s entrapment also brings about the loss of any distinct outer reality. He loses touch with time and his watch even stops running. He realizes that something should be done in order to halt this entropic process: “As long as this vicious circle was not broken somewhere, not only his watch but time itself would be immobilized, he feared, by the grains of sand” (Abe 93). Life in the dunes then, obliterates temporal differences, reducing them to nothingness. This immobilization of time brings to mind the final state of oneness which the universe is expected to reach when it succumbs to heat death, that is, when time itself drifts towards inertia

(Sypher 74) and “would stand still, that is, would cease to have a direction or any topological property” (Meyerhoff 65).

### **Negentropic Leaps: An Empty Water Jar and Niki’s Subjection to Thirst**

This imminent immobilization of time increases Niki’s resolution to overcome his present situation and, ironically, to find a way to go back to the entropic world outside, where he would presumably not be subject to dehumanization and objectification. This move can be looked at in terms of terms of chaos theory, as a shattering moment that pushes a system to reorganize itself, to leap from disorder into order. Niki’s attempts to leap into order at this point are manifold.

For instance, he tries to awaken the villagers’ conscience when he points out to them that he has obligations towards his students: “You’re the parents of children, aren’t you? You surely understand the obligations of a teacher!” (Abe 152). When this attempt at moral awakening does not sensitize the villagers to his plight, he resorts to threats of punishment by the “external” authorities who will regard his detention as a criminal offence. Unfortunately, his modes of persuasion are to no avail since the villagers had already cut themselves completely off from the outside world. In other words, the village and its inhabitants have turned themselves into a closed system: “The village was already corroded by the sand, common everyday conventions were not observed; perhaps it had become a world apart” (Abe 52). Niki comes to the realization that he is helpless and on several occasions compares himself to an injured animal, one for whom the arrow of time is moving towards greater suffering, toward endless captivity. Despite this realization he takes various measures: “He could not be without a plan of action. Such a stupid situation was unbearable” (Abe 53).

One of Niki’s negentropic measures is to turn himself into a closed system by refusing to be a source of energy that will decrease or halt the disintegration of the woman’s house. He even tries to drain the woman’s energy, to prevent her from accomplishing the task of shoveling the sands by feigning to be sick, thus forcing her to take care of him during the days and preventing her from resting. An early traumatic dissipation of her energy will occur once she has to cope with the double task of shoveling the sand and tending to his needs. Niki’s feigned sickness and “dissipation” are conscious acts aimed at preventing his entropic dehumanization and objectification.

At this point he even becomes an agent of entropy. The outer entropy caused by the sand and resulting in his incarceration leads him to subject the woman to inhumane treatment. Out of desperation he seems to take on the villagers' entropic moral decay: he ties the woman's hands behind her back and stuffs a towel in her mouth, thinking that the villagers will now release him in order to save her life. Unfortunately, he comes to realize that this objectification of the woman and deprivation of her freedom are to no avail: "He knew very well that, far from taking pity on her, they would sacrifice the woman without compunction if the need arose" (Abe 123).

What seems at first to be a solution, then, a temporal point or moment of "shattering" that would allow Niki to leap into order and overcome his entropic situation, is nothing but a deeper chaos lurking behind a façade of order: "He was like an animal who finally sees that the crack in the fence it was trying to escape through is in reality merely the entrance to its cage—like a fish who at last realizes, after bumping its nose numberless times, that the glass of the goldfish bowl is a wall" (Abe 123). The empty water jar further corroborates his belief that he has already fallen into the enemy's trap. It now dawns on him that the villagers have themselves cut off the water supply. By doing so, they were trying to make him howl and pick up his shovel. He lets out a cry of dismay: "What in God's name do they think they're doing? Do they want to kill me?" (Abe 123). It was clear "[t]hey intended to get around him by subjecting him to the fear of thirst" (Abe 153). Niki's subjection to thirst and to the fear of death (the fear of dying of thirst) is thematized in this section of the novel by means of numerous images of dryness and references to the empty water jar, the token of his primary deprivation. He is unable to clean all the sand out of his mouth with the little water left in the water jar; he lets the sands run down his throat along with the water. The cheap sake delivered by the villagers, he thinks, may moisten his throat enough that he can go temporarily without water, but he is wrong.

Once again water, now in the form of rain, will free Niki from his subjection to thirst and dryness. He stands in the doorway of his sand-cave and looks at the sky, hoping to see some clouds that promise rain. To his dismay, he only sees small fleecy clouds. With each breath he exhales his body loses more moisture, making his need for water more and more pressing, even though he has trained his body to make do with very small amounts. At this critical moment, surprisingly, Niki's thoughts turn toward the properties of water: "It would be interesting to speculate just how long it would take for a glass of water to evaporate" (Abe 124). However, his increasing thirst reinforces his mental and emotional entropy: "His judgment

and ability to think were no more than a snowflake on his feverish brow when he was faced with the threat of thirst" (Abe 154).

This threat also distorts his self-image and leads to his further dehumanization, for now he views himself as "an empty water pipe in a deserted house, covered with spider webs and smeared with dust, gasping like a fish" (Abe 143). Hallucinatory nightmares add to his agony and only intensify the real thirst he feels when he awakens:

It was a dream about a lavatory which he could never find although he could hear the sound of water, about a common bathroom where the toilet was filled to overflowing with feces, about a long gallery whose flooring was beginning to warp, about a cracked glass. There was a man, running with a canteen. When he asked him for just a swallow of water, the man scowled at him, making a face like a grasshopper, and rushed off. (Abe 143)

Niki at one point starts to crave "[s]parkling, crystalline water, with silver spurs of air bubbles rising from the bottom of the glass" (Abe 143), and here a contrast between pure and impure water is established. He picks up the empty kettle thrown on the floor and tips it to his mouth. A few drops finally dampen the end of his tongue that otherwise remains as dry as blotting paper: "His expectant throat convulses even more, as if it had gone insane" (Abe 143), thus paralleling his entropic mental state. Abe highlights Niki's desperation. His thirst unquenched and frantic for water, he rummages around in the vicinity of the sink for anything he can get his hands on. Surprisingly, in a moment of clear insight he ponders once again the nature of water: "Of all chemical compounds water was the simplest one" (Abe 144). Hence, "[i]t should not be impossible to find some somewhere . . . like a penny forgotten in the desk drawer" (Abe 144). Smelling water, he hastily scrapes some wet sand from the bottom of the sand jar and stuffs his mouth full, causing a feeling of nausea to well up in him.

Niki's failure to quench his thirst or (symbolically the same thing) his fear of death causes him to give in: "But this was certainly no way to die . . . he was not a dried sardine, after all. Yet he would have made a fool for anyone to see if only he could get hold of some water" (Abe 145). This reaction is clearly at odds with his earlier reflection, when the woman informed him of the absurd fact that the villagers would replenish the water jar as soon as they resumed the shoveling of wind-blown sand:

Life is a bound diary. There is no need to do one's duty for a page that is unrelated to the preceding one. One cannot get involved every time someone is on the point of starvation. But no matter how much he wanted water, he still did not have enough bodies to go around to all the funeral services of people who were of no consequence to him. (Abe 127-28)

Nevertheless, at this critical juncture he reluctantly unties her hands and both of them pick up a shovel, though he continues to think about the salvation that rain would bring: "Damn it . . . if it would only rain he would not have to do this. He would hold out his two hands and they would be filled with water. Streams of water on the windowpanes . . . pillars of water bursting from the eaves and troughs . . . splashing rain veiling the asphalt" (Abe 147).

The narrative also gives us Niki's reaction when one of the old villagers lets down a bucket of water. In a moment of uncharacteristic excitement he flies into the air to get it, shouting: "Water! At last it had come! It was water, unmistakably the real thing!" (Abe 147). He even pushes the woman aside and impatiently thrusts his face into the bucket a number of times, his body heaving like a pump. Niki's unremitting fear of being subjected to thirst naturally leads him to become paranoid about the water supply. As the woman begins to work he is seized by a profound suspicion that she has finished drinking what was left of the water. He hurries back to the house, only to discover that the water was all there. Once more he gulps down three or four mouthfuls, and again is amazed at the limpid mineral taste. The next day, after his daunting nightly labor, he nervously peers into the water jar but is reassured to see that it is brimming full. He dampens the towel, wipes his face, washes his neck and flanks and shakes the sand from between his fingers. On a grander scale, he dismisses man's mental and emotional needs: "Maybe he should be satisfied with creature comforts and let the rest go" (Abe 157).

### **More Negentropic Leaps and Their Outcomes**

Despite Niki's temporary resignation he still tries to run away, and with his first two attempts we witness his vain effort to climb the walls of his sand prison, from which he comes rolling back down in Sisyphean fashion. These attempts at escape engender greater entropy in the form of physical injury, dejection, lethargy, numbness and a drifting away from feeling that pushes him on various occasions to consider suicide by ingesting the potassium cyanide he uses for his insects. Yet this

descent into an entropic state seems to promise Niki a sort of utopic release, one which might be correlated with Freud's *thanatos* or death drive, the tendency to "return to the inorganic state," the inertial pull toward non-being with its ultimate sense of peace and security (qtd. in Sypher 76). This death wish is the most radical form of the pleasure principle, the longing for a nirvanic state where all tensions are reduced. It is the desire for non-differentiation and thus for entropic terminal equilibrium, as opposed to negentropy, energy, the erotic, aggressive drives of any organism (Jackson 73). Yet, paradoxically, in chaos-theory terms it seems that these first two failures generate order from out of their disorder, for now Niki is more determined than before to find a way out of his prison.

His third attempt at escape is the most "chaotic." On the forty-sixth day of his captivity, he manages to hoist himself out of the hole. Implicitly he realizes that, as in chaotic systems, the outcome may portend surprise and even disaster, that "it was still too soon to be pleased with himself. He had simply got hold of the money with which to buy a lottery ticket. He would see now whether he would win or lose" (Abe 170). This unclear outcome brings to mind the large number of possible arrangements typical of chaotic systems. And sure enough, the villagers trap him once again. One might say that Niki has been moving freely (or with an absolute illusory freedom) along a line within an absolutely limited domain, like the Lorenz attractor of chaotic systems which "represents a theoretically infinite irregular (unpredictable) line within finite set boundaries (Brady 70). The villagers guide him towards moving sands in which he is about to be buried: "They intended quite simply to liquidate him without even going to the trouble of capturing him" (Abe 200). Earlier in the novel, when he tries to make a steep slope more gentle in preparation for his escape, he ponders the nature of water and sand and emphatically declares: "But no matter how much sand flowed, it still wasn't water, and he had never yet heard about anyone being drowned in sand" (Abe 67-68).

Now, however, it seems Niki is really about to drown in sand. What he thought was the road to freedom, to the very ends of the earth, turns out to be the path toward maximum entropy, toward real physical annihilation if the villagers do not come to his rescue. Fear convulses his throat, and he gives an animal-like cry for help; the mindless desire to survive goes beyond individuality, for continued life is also the goal of the social "mass." Because of his closeness to death, Niki feels emptied of both hope and shame, but his reaction is complex and non-linear like that of a chaotic system. As soon as he hears the voices of the villagers calling to him from behind, he expresses his desire to be done with this shameful situation as quickly as possible. And yet these villagers rescue him by stripping away the sand

from him. Niki feels subdued, no longer caring about his complete loss of dignity, his dehumanizing objectification. He again falls prey to an entropic emotional and physical lethargy: “His dreams, desperation, shame, concern with appearances—all were buried under the sand. And so, he was completely unmoved when their hands touched his shoulders. . . . Now, he was nothing more than a punching bag to be knocked around” (Abe 203). Upon his arrival back down in the sand-cave, the woman speaks to him with a strong but unsteady voice, informing him that not a single person was able to escape. Tenderly, she asks him if he would like to be washed and begins to rub some soap on a wet cloth. Washing him takes on the characteristics of a ritual. However, in contrast to the previous times, it does not end up this time in a sexual encounter. Its purpose is to cleanse his body and thus renew his energy, his hope. Yet Niki sees that a total catharsis could never be achieved: “Suddenly a sorrow the color of dawn welled up in him. They might as well lick each other’s wounds. But they would lick forever, and the wounds would never heal, and in the end their tongues would be worn away” (Abe 207).

After Niki’s various abortive attempts to recapture his freedom, to flee from this state of entropic equilibrium, he hits upon a new plan. He sets a trap to catch crows in the empty space behind the house, hoping that somebody will come to his rescue when they discover the letter he writes and fastens to the crow’s leg: “Of course, it was a question of luck. In the first place, the possibility was very slight that, when he released the crow, it would fall into anyone’s hands. He would never know where it would fly off to” (Abe 212). This multiplicity of possible outcomes (including many negative ones) suggests, once again, the entropic, probabilistic, chaotic-systems “context” of Abe’s novel. Earlier Niki has established a connection between his life in the dunes and probability:

There was a woman . . . there was sand . . . there was an empty water jar . . . there was a drooling wolf . . . there was a sun. . . . And, somewhere, he knew not where, there must also be a storm center and lines of discontinuity. Where in God’s name should he start on this equation filled with unknowns? (Abe 125)

Ironically, Niki names his trap “hope” knowing that there is little likelihood of actual success. The improbability of success paradoxically calms him, makes him patient, and indeed in his view “[p]atience itself was not necessarily defeat. Rather, defeat really began when patience was thought to be defeat” (Abe 221). Such patience represents, in systems-theory terms, order emerging out of disorder.

## Niki's Fluid Self and the Waters of Negentropy and Rebirth

The instability of order and disorder, that is, the unpredictable and quick transition from order to disorder and/or from disorder to order encountered in chaos theory, characterize Niki's reactions. His patience and emotional quietude hide a deeper exasperation and discontent. One of Abe's techniques is to mirror Niki's inner turmoil physically: at one point, for instance, he impulsively and for no apparent reason knocks a box of beads from the woman's knees, causing the black grains to fly over the floor and sink into the sand. The woman's startled look reveals the absurdity of this action. At another point, he suddenly warns her of the greater destruction that awaits them: "Yes indeed. Soon it'll be too late. We'll look one day and find that the villagers have disappeared to a man and that we're the only ones left. I know it . . . it's true. This is going to happen soon for sure. It'll already be too late by the time we realize we've been betrayed" (Abe 222).

Niki fluctuates between periods of rebellion and resignation. Since his last escape he had become extremely cautious: "He adjusted himself to the life of the hole, as if it were a kind of hibernation, concentrating his efforts on making the villagers relax their vigilance" (Abe 212). This hibernation is symptomatic of his emergence into an orderly life which consists of concentrating on some kind of monotonous handwork—sweeping sand from the ceiling, sifting rice and washing, a life that would allow time to fly while he was at work. However, this state of hibernation was not considered a permanent one: "He had intended this accommodation to be a means, never a goal" (Abe 216). Paradoxically, it slowly acquires the characteristics of permanence as Niki begins to establish roots, and comes to think of the woman's home as "their" home: "Let's buy a pot with a plant in it sometime, shall we? He was astonished himself, but the woman's expression was even more puzzled, and so he could not back down" (Abe 224-25). Niki's reaction can be viewed as a bifurcation point, a sudden unexpected leap to a higher level of order or organization, Prigogine's "dissipative structure" (Toffler xiii). However, as at any bifurcation point, it is impossible to determine in advance whether the system will disintegrate into chaos or leap to a higher level of order, hence justifying both Niki's and the woman's bewilderment. This is also Abe's conception of "the self and its society as flexible, adaptable. . ." (Iles 40).

In another unexpected twist, while checking the bait in his bird-catching contraption Niki discovers that pure water has collected at the bottom of the leaking bucket, even though it has not rained for half a month at least: "There were only about four inches, but it was more clear by far—indeed it was almost pure—than

the water with the metallic film which was delivered to them daily” (Abe 233). This device has unpredictably revealed to him the negentropic nature of the sands, for the water is replenished by the capillary action of the sand itself: “Because the surface sand had a specific heat, it was invariably dry, but when you dug down a little the under part was always damp. It must be that the surface evaporation acted as a kind of pump, drawing up the subsurface water” (Abe 233). Niki thus discovers that sand, which he has until now viewed as a destructive entropic agent that serves only to break down all structures and leads to the dissipation of physical, emotional, intellectual and moral energy, to a state of uniformity, inertia and death, is in fact also a negentropic source of life. The discovery of water in the sands is a system-shattering moment that pushes Niki to a new level of order and organization.

He now experiences a new elation: “The fact that he was still just as much at the bottom of the hole as ever had not changed, but he felt quite as if he had climbed to the top of a higher tower. . . . He was still in the hole, but it seemed as if he were already outside” (Abe 235). His realization that he is no longer at the mercy of the villagers intensifies his euphoria. Even if they cut off his water supply, he would be able to survive.

Niki’s discovery allows him to overcome his feeling of being totally alienated from the villagers. He would like to talk to someone about the water trap: “And if he wanted to talk about it, there wouldn’t be better listeners than the villagers. He would end up telling someone—if not today, then tomorrow” (Abe 239). Thus he has a new sense of belonging to the sand community rather than being merely another anonymous worker, mindlessly shoveling sand. Determined to overcome his entropic mental state, Niki decides to actively engage himself in any kind of scientific and technical work that will improve his water-storing device. His approach now becomes more pragmatic; he no longer ponders a surreal solution to the problem of the destructive effect of the sands:

If a ship floated on water, then it would also float on sand. If they could get free from the concept of stationary houses, they wouldn’t have to waste energy fighting the sands. . . . Sand, of course, was not a liquid. There was no reason, therefore, to expect it to be buoyant. . . . A boat that would float on sand would have to possess much different qualities. It could be a house shaped like a barrel. . . . Of course, people would not be able to endure the instability of a house that kept

revolving all the time. . . . A house which would move like the pendulum of a great clock . . . a cradle house . . . a desert ship. . . . (Abe 42)

Niki also hopes to offer the villagers a fruitful, productive education rather than “an illusory one that makes one believe that something is when it really isn’t” (Abe 98). At the philosophical level, he adopts a new holistic perspective: “Turning around, he could see the whole scene. You cannot really judge a mosaic if you don’t look at it from a distance. If you really get close to it you get lost in detail. You get away from one detail only to get caught in another. Perhaps what he had been seeing up until now was not the sand but the grains of sand” (Abe 235). He comes to discover that his previous way of looking, one based on reductionism—on the magnification and consequent fragmentation of a physicist who wants to look at the constitutive particles (atoms or subatomic particles) of all matter rather than at “whole things”—is itself a source of disorder and confusion, whereas this new perspective can be a source of order and possible rebirth: “The change in the sand corresponded to a change in himself. Perhaps, along with the water in the sand, he had found a new self” (Abe 236). It now becomes clear to Niki that his life in the dunes is not merely the cause of his self-disintegration, a hindrance to his self-realization: if looked at holistically from a distance, like a sort of mosaic, it becomes a bifurcation point that allows the generation of order out of chaos. He now sees his life in the dunes as the precondition of his regeneration, resurrection, self-discovery, for these hygroscopic sands may also temporarily become, as Hayles puts it, “the womb of life and not its tomb” (*Chaos Bound* 100).

After Niki’s discovery of water in the sands there is an acceleration of events, of fluctuations that propel the novel towards several bifurcation points, making the direction of further change unpredictable. Niki gets closer to the woman, begins to give her a hand with her craftwork, begins to share her objective of buying a radio while also hiding from her the real significance of the trap. More surprisingly, he does not try to get out of the village when the villagers leave for him the long-awaited rope ladder, after they carry the pregnant woman away to a doctor. At this crucial moment Niki hastens back down the ladder to repair the damaged water trap. He tries to suppress the sobbing that seems to burst from him and plunges his hand into the bucket. He sinks down on his knees and remains motionless, his hands still in the water. His inertia reflects his decision not to leave the village and valorizes his creation of a new self.

At this shattering moment of re-reorganization he naturally feels no urgency to go back to his former life: “There was no particular need to hurry about escaping. On the two-way ticket he held in his hand now, the destination and time of departure were blanks for him to fill in as he wished” (Abe 239). This two-way ticket that he holds in his hands is much valued by Niki, for after all “[a] one-way ticket is a disjointed life that misses the links between yesterday and today, today and tomorrow” (Abe 161). The one-way ticket stands for the fragmented, entropic perspective that he comes to reject in favor of a more holistic one. A two-way ticket also means, of course, that he won’t stay in the village forever, but “[h]e might as well put off his escape until sometime after that” (Abe 239); that is, until after he talks to the villagers about his discovery of water in the sand. This discovery could itself be seen as the mediating point (rather than bifurcation point) between the flows of staying and departing.

The novel ends ironically with a missing persons notice stating that Niki has been missing for seven years and has been officially declared dead. To the “external” world, then, Niki’s departure and disappearance will seem to have led, as if through the force of an irreversible entropy, to his annihilation. In fact, however—or as it appears from his own subjective perspective—his life in the village has led to that rebirth of order out of chaos of which Prigogine speaks. One might even compare such a reading to existentialist interpretations of the novel, interpretations which note that the absurdity of existence can still somehow allow for, if not quite engender, a meaningful and dignified life, albeit one stripped of any moral valence. However, just as chaotic systems are prone to fluctuations and bifurcations, so is Niki’s new life. The outcome, the “ending” is merely another moment in a series of moments, one that remains unpredictable in the face of an unknown future. The aleatory nature of Niki’s new life, after all, tinges what we have (perhaps a little hyperbolically) called here his “rebirth” with irony, and attests to Abe’s fundamental belief in a complex and protean self, one possessing all the myriad qualities of drifting sands and fluid waters.

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