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**Florida in Gregory Bateson's
Ecology of Ideas: Balancing
Ecological Paradoxes**

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As the world began realizing the depths of the ecological crisis of species extinction, overpopulation, and industrial pollution in the 1970's, the ecologist Gregory Bateson argued that ecological problems were primarily the result of a bad ecology of ideas. Our ecological crises, Bateson insisted, are brought on by ideas that denied our dependence on nature or attempted to control and direct the relationship with nature. Bateson predicted that only an aesthetic reorientation grounded in a new subjectivity could lead us towards a sustainable future.

Four decades into the ecological crisis, the *Journal of Florida Studies*

invites contributions outlining how the humanities can provide a sustainable future for Florida. Writing my response from my house in south Florida, I know this is a pressing question. In just one instance from recent press coverage, *Rolling Stone* magazine depicts how Miami is tragically overrun with water in its June 2013 cover story, "Good bye, Miami." In his lead article, Jeff Goodell predicts a devastating fate for this great American city, arguing that America's playground and fantasyland of south Florida will soon become uninhabitable under the pressure of sea level rise, saltwater intrusion, and massive weather systems. Goodell predicts that Miami will join Atlantis and become a lost city. Although I hope Goodell is wrong in his predictions, I am not a scientist and do not make predictions. I am a critic that hopes a new aesthetic ecology, like the one I see in Miami artist Xavier Cortada, can turn back the rising tides of south Florida and offer a

sustainable future. Charting a new course requires investigating south Florida's social and ecological history to illustrate how a new humanities grounded in Bateson's aesthetic ecology can provide a new conception of the self-in-nature.

Florida as an Ecological Idea!

As I write this response on the breezeway of my 1950's home in Miami-Dade County between the City of Miami and Everglades National Park, I know if Goodell is correct my house will soon be beachfront property. Although intrigued by the idea of beachfront property, I also know the land would become worthless and uninhabitable. My home is in a neighborhood named Whispering Pines after the pristine Pine Rockland Ecosystem that used to inhabit this limestone ridge between the Everglades and the Atlantic Ocean. The whispering slash pines that dominated that ecosystem are now nearly extinct and replaced with non-native prairie grasses and exotic trees. Two years after moving to south

Florida, I discovered that most of the wildlife and almost all of the people I encountered were never native to the region. We all seem to be transplanted, uprooted, and resettled.

One of the shocking realizations of living in Florida and learning its history is coming to grips with the superhuman efforts it took to transform south Florida into something remotely inhabitable. As recently as 100 years ago, nearly half of the state was an expansive wetland system covering vast swaths of the southern and central parts of the state. Water flowed from the headwaters in the Kissimmee River, near present day Orlando and Disney World, into Lake Okeechobee which holds water like a giant cistern in central Florida. Gradually this water would flow out of Lake Okeechobee and slowly travel south over a slight decline averaging an inch per mile until it reached the Gulf of Mexico at the Thousand Lakes or the Atlantic Ocean at the Florida Keys. The water flow was perfectly timed for the delicate ecosystem in south

Florida, including Florida's aquifer. The expansive sea of grass originally covering south Florida was nearly impossible to navigate—at least human navigation. For most of its history, the Everglades were left almost completely undeveloped, unsettled, and unexplored. The Everglades also provided a backdrop to the two Seminole Indian Wars, and the difficult terrain largely explains why the United States Army with a far superior artillery was never able to conquer a much smaller Seminole nation over the course of the two Seminole Wars.

In the late nineteenth century, land developers came to Florida and imagined an oasis of profitable land under the vast and uninhabitable wetlands that only needed to be reclaimed. In search of huge profits, Hamilton Disston purchased four million acres near Lake Okeechobee in 1881 and began building canals and dredging rivers to realize his dream of workable land. Fifteen years later, on the Atlantic coast, Henry Flagler built a railroad empire extending

from St. Augustine to Key West, creating easy access for visitors. And just eight years later, Florida elected governor Napoleon Broward on his campaign promise to reclaim agricultural land for inland farmers. The reclamations, the railroad, and the desire for development resulted in a housing boom that brought settlers to Florida in droves. Land speculators and settlers routinely purchased swampland on the promise of quick profits.

Nature, however, proved harder to control, and two hurricanes overwhelmed the levees and dykes in south Florida flooding Miami and Lake Okeechobee in 1926 and 1928. The hurricanes devastated the housing economy of south Florida, and the reclaimed land plummeted in value. The Florida legislature responded by authorizing a flood control program, and the Federal government built the Hoover Dyke around Lake Okeechobee. Eventually, with the passage of the Central and South Florida (C&SF) Project in 1948, Congress

authorized the Army Corp of Engineers to build a series of canals, levees, and water control systems to prevent flooding and control the water of south Florida. The Central and South Florida project ultimately created the Everglades Agricultural Area and changed the water flow of south Florida forever. Michael Grunwald summarizes the transformation of the Everglades succinctly when he writes, "the story of the Everglades is also the story of the transformation of south Florida, from a virtually uninhabited wasteland to a densely populated fantasyland with 7 million residents, 40 million annual tourists, and the world's largest concentration of golf courses" (5). The tourist-driven fantasyland that south Florida became is a direct result of humans dominating nature. For the first time in the history of the Everglades, people and their crops surrounded this ecosystem completely and directed its water. The Everglades and Florida's aquifer were needed for survival to support development and farming. The early history of

south Florida in reclaiming nature speaks to how rapid industrialization hoped to shape and control nature to its own ends.

Before wealthy industrialists shaped and reshaped Florida, the Everglades were inhabited by countless wildlife. John Audubon, the ornithologist and nature painter, famously captured the wading birds of the Everglades and the Keys in his *Birds of America*. In 1903, President Teddy Roosevelt set aside Pelican Island located east of Florida's Atlantic Coast as the first federal land for nature preservation. St. Marks National Wildlife Refuge on North Florida's Gulf coast is one of the first wildlife refuges designated as a wilderness area. Indeed, the rise of a fantasyland in Florida and the rapid drainage of the Everglades created the need to reclaim nature from the very civilization and the civilizing process itself.

As the progressive era came to an end and south Florida saw a housing bust, conservationists began taking interest in the loss of

habitat for migratory and wading birds. The call for protection of these habitats came forcefully when in 1934 Thomas Hambly Beck, Jay Ding Darling, and Aldo Leopold wrote in the *Report of the President's Committee on Wild-life Restoration* that Florida's wildlife had suffered and their numbers were depleted as a result of the drainage of habitat for farming.

The rapid depletion of the migratory waterfowl recourses now universally admitted to be a fact, is part a result of the unwise exploitation of sub-marginal lands. Drainage operations, intended to bring more land under cultivation, have directly destroyed millions of acres of former breeding grounds, and by lowering of water tables, have indirectly destroyed millions of acres more. (11)

Jay Ding Darling, who participated in the committee, came to champion Florida's conservation efforts from his adopted home on Sanibel Island. As a result, Sanibel is now home to the Jay Ding Darling National Wildlife Refuge. Darling was also critical in establishing the Key Deer National

Wildlife Refuge in the Florida Keys. The Florida that Jay Ding Darling helped to preserve was in desperate need of protection from modern development. Darling's cartoon, "The Last of American Wilderness," attached to the *Report of the President's Committee on Wild-life Restoration* depicts helpless birds pushed together on a barren tree pleading for surrender and for help. In Darling's cartoons, civilization is a disease with urban nature "lovers" imagined as nature's constant antagonist. What emerges in Darling's work is the vision of wilderness that has surrendered and is in need of protection by preservation politics. The savior, for Darling, comes in the form of the paternal father – personified as the game warden, the farmer, or the good-boy hunter. Darling embodies the call for increased natural science, and he creates a clearinghouse for conservation information (later the National Wildlife Federation he helped establish in 1936). In Darling's work, nature is reconstructed to exist at the moment where it was

untouched by us, a hope that finds ultimate expression in the 1964 Wilderness Act which defined wilderness areas as spaces “where the earth and its community of life are untrammelled by man, where man himself is a visitor who does not remain” (1).

From the position of wilderness and wildlife preservation, the evolving, dynamic, and always changing nature stops in a hypostatization, frozen in a time before the advent of western progress and civilization. William Cronon argues there is a central paradox between wilderness understood as pristine untouched “wildness” and human civilization understood as technical and industrial progress. Cronon argues the idea of wilderness often perpetuates an unreflective stance towards our lifestyle choices, habits, and civilizations that are the very things that create the environmental problems we face today. “The extent that we live in an urban industrial civilization but at the same time pretend to ourselves that our real home is in the wilderness,” Cronon argues, is

the “extent we give ourselves permission to evade responsibility for the lives we actually lead” (81).

Bateson’s Ecological Paradox and Aesthetic Ecology

Gregory Bateson might see in Florida’s history an impossible position. The hubris of industrial capital believed it could change the world to fit its own designs on a tropical paradise. As the paradise started threatening the wildlife of south Florida, conservation efforts hoped to shore up and wall away wilderness preservation and wildlife refuge areas. Florida’s history suggests that the more industry and technology make it easier to live in south Florida, the more wildlife becomes in peril. Yet, perhaps paradoxically, the more we preserve, the less we feel the pressure to change our habits and address our unsustainable lives. The self-in-nature occupies an impossible contradictory position because there is no conception of a self that is embedded within an ecological system; thus, there is no ecological self.

As a solution to the ecological crisis, Bateson's *Steps Towards an Ecology of Mind* published in 1972 introduces the cornerstone of his ecological and critical project of investigating the process of thought, or epistemology, by inviting his readers to take steps towards a new ecological awareness. Bateson's *steps* involve moving from a traditional epistemology denying ecological connections towards a new ecological approach recognizing the depths of interconnections. Before retracing these steps, it is important to note a difficulty in Bateson's terminology. Bateson's use of "epistemology" is slightly at odds with ordinary or traditional understandings of the word. Bateson does not use epistemology to mean the study of what we can know as axioms of science, as sense data, or as justified belief, but rather he uses the word to mean the study of the process of knowing and perceiving. Bateson's epistemology explains the process of creating subjects, objects and sequences of meaningful action out of our daily lives.

Before leaping into Bateson's aesthetic ecology, it is also wise to clarify his difficult use of cybernetics. Bateson understands cybernetics as an academic movement "growing together from a number of ideas which had developed in different places during World War II....We may call the aggregate of these ideas cybernetics, or communication theory, or information theory, or systems theory" (474). All the different approaches address the question of organization and the phenomena of stable organization during times of intense change. In other words, cybernetics is interested in how systems maintain particular levels of organization and apparent coherence even while rapidly changing variables. From this aggregate of ideas, Bateson argues, the central contribution of cybernetics is the notion of negative and positive feedback loops and the servomechanisms that detect change and deviation in a cybernetic circuit.

The classic example of cybernetics is a steam engine with fly-ball

controls, where the speed of the steam engine is controlled by the angles of the fly ball that either constrict or open the supply of steam from the boiler to the engine. The fly balls control the speed of the engine because as the engine accelerates, the ball governor constricts the air intake valve, thus decreasing the amount of steam moving into the engine. As the train decelerates, more steam flows into the engine, resulting in an increase in speed. The engineer can calibrate the governor by adjusting angles on the balls to maintain a desirable speed.

Variables, thresholds and differences are key components of all biological organizations. As Bateson states:

any biological system (e.g. the ecological environment, the human civilization, and the system which is to be the combination of these two) is describable in terms of interlinked variables such that for any given variable there is an upper and a lower threshold of tolerance beyond which discomfort, pathology, and ultimately

death must occur. Within these limits, the variable can move (and is moved) in order to achieve adaptation. (496)

Bateson is expressing an important principle of interconnected systems in which a system responds to feedback by adjusting variables in order to maintain its organization. Bateson understood cybernetics as the art of balancing stability and change in biological, technical, and social systems in order to maintain vital organizational integrity.

Bateson often uses the example of a tightrope walker who is always changing certain variables in order to maintain balance in a dynamic system that includes the walker, the pole, the wind in the air, and the rope.

Bateson's focus on system thresholds draws attention to the role of the observer of difference in dynamic systems that must maintain states of equilibrium.

The observer, or as Bateson would say, "mind," must be able to detect information or report of a difference in order to respond to changes in the environment by

adjusting variables to maintain a desirable state. The observer responds to detectable levels of change because according to Bateson, it is a "difference, which makes a difference" to that observing entity (453). Mind, the observer of change and deviation, is evident in any place where there is enough complexity to exhibit and respond to feedback processes. The focus on ecological mind, for Bateson, pointed toward the study of relationships that maintain systems of dynamic equilibrium.

Bateson's ecological mind then is the system of interconnecting circuits that operate to maintain steady states of organization by observing difference and correcting key variables. Studying the observer of difference and information in Bateson's ecological mind is a philosophical compliment to the scientific study of ecology. Bateson argues, in addition to issues of industrial pollution and population growth, the emerging environmental movement ought to focus on the role of values and ideas in shaping the course of

monitoring environmental health. Without focusing on values and ideas, Bateson argues, environmental planners will rely on ad-hoc technological fixes to provide limited relief.

Having outlined Bateson's starting assumptions in cybernetics and epistemology, the reader can begin to appreciate Bateson's *Steps to an Ecology of Mind*. The first *step* in Bateson's epistemology is to avoid falling into the "trap of misplaced concreteness" (50). This trap, Bateson argues, is one that scientists are prone to fall into by creating "explanatory principles" that explain social and environmental phenomena by abstracting them from larger cybernetic and systemic processes (38). Instead of parts and explanatory devices, Bateson is committed to cybernetic explanation that describes social and environmental processes from within the looped networked structures described above. The second *step* in Bateson epistemology is realizing that the observer's descriptions of the self

in its environment, or the self-in-nature, operate to construct and maintain boundaries in the system. The first two steps operate in a recursive fashion, meaning that the second step – to use an odd phrase – is always already conditioned by the first step. It may be important to call it a two-step dance that invites a consideration of movement.

This dance towards an ecology of mind is not without consequences and inherent risks. The steps share a familiarity with the steady states of an ecological system and the disruptive patterns of addiction because they are all self-reinforcing and mutually entailing. Bateson's *Steps to an Ecology of Mind* includes an essay on the twelve steps of Alcoholics

Anonymous where he writes:

[I]n the natural history of the living human being, ontology and epistemology cannot be separated. His (commonly unconscious) beliefs about what sort of world it is will determine how he sees it and acts within it, and his ways of perceiving and acting will

determine his beliefs about its nature. (314)

Bateson argues the organisms' habits and patterns of thought limit their capacity to imagine new configurations, including imagining new boundaries of the subject. Unfortunately, Bateson felt the ecological predicament demonstrated that modern technological civilization was in the throes of addiction, and like an addict, modern civilization continues to engage in disruptive and harmful behaviors.

As an exit strategy out of addiction, Bateson suggests a third step involving the observer's ability to redraw and relearn the lines between the self and the environment. In Bateson's work, the third step takes the form of focusing on learning and relearning the self. Bateson argues that learning is always dependent on prior learning and on the contexts of learning. Bateson outlines a model of proto-learning and deutero-learning to distinguish between contexts of learning. Proto-learning is the learning of a

task or the learning of a skill, and deutero-learning is a secondary learning that involves the context of the learning situation. Bateson later elaborates the two types of learning into three levels of learning to explain how learning, like Russian dolls, is nested. Level one is the learning about skill, level two is the learning about the context of the learning, and level three is learning about the learner in the context of learning. Bateson's theory of levels of learning involves the emergence of a subject, but also the process where subjects change and evolve. Bateson illustrates how the third level of learning is dangerous because it involves changes to the subject:

Even the attempt at level III can be dangerous, and some fall by the way side; these are often labeled by psychiatry as psychotic, and many of them find themselves inhibited from using the first person pronoun....For others more creative, the resolution of contraries reveals a world in which personal identity merges into all the processes of relationships in

some vast ecology or aesthetic cosmic interaction (305-304).

Learning the "vast ecology or aesthetic cosmic interaction" is seeing the ecology of mind and learning a new understanding of self-in-nature.

The problem with bad epistemology is that it produces the illusion that parts are separate from the larger environment and that parts can control/determine the whole. Verena Conley clarifies Gregory Bateson's position when she states that "the basic error is linked to modes of exchanging and to construction of subjectivity that posits the self as an autonomous unity that gains an identity when it is cut off from other 'loops'" (59). Bateson argues it is inappropriate to draw the lines between self-in-nature in such a way that it promoted self vs. the environment or promoted a hope to control nature. Bateson's diagnosis of addiction in ecology centers on how western civilization sets up the world in such a way that the self goes to war with nature and its

environment. Bateson held little faith in a program of preservation that operated to preserve nature while keeping intact the basic erroneous premises of a self-in-nature. For Bateson, a more appropriate way of thinking of the self would be as intimately linked to an exchange of information that constitutes and participates in the world of interaction and ecological processes. Bateson famously suggested a pattern which connects the self to the environment. Bateson, however, only suggested pattern and posed it to his readers in the form of a question famously asking us: "What pattern connects the crab to the lobster and the orchid to the primrose and all the four of them to me? And me to you? And all the six of us to the amoeba in one direction and to the back-ward schizophrenic in another?" (7).

Returning to south Florida, it is clear that Bateson's steps were not meant to diagnose right and wrong. Nor is the recounting of Florida's history meant to tell us where we got it all wrong.

Retelling the stories of Florida's history, like the stories told in recovery, are meant to help us recount and acknowledge our addiction. Today, it is difficult not to see addiction in south Florida. We continue to develop coastal wetlands, while trying to mediate our impact with wetland offsets. We continue to develop and preserve, while storms and weather systems escalate their strength and frequency. We develop Florida, while simultaneously committing ourselves to the largest wetland restoration program in the world with the Comprehensive Everglades Restoration Plan. The Comprehensive Everglades Restoration Plan diverts water back into the Everglades with giant pumping stations and concrete cisterns that replace the natural flow of water and Lake Okeechobee with a technological life support system.

Acknowledging the Pattern which Connects

As a writer and a theorist, Bateson is non-political, and he never develops or recommends policies.

His ecological program is grounded in learning a new way of thinking about interconnections by acknowledging patterns of feedback loops. Bateson seemed hesitant to recommend purposeful action because, he feared, it might too easily reinforce a bad ecology of ideas. This hesitation made him appear overly conservative during his lifetime. It might seem natural then that Bateson would turn to art instead of politics and science as an ecological corrective. In answering the question posed by the *Journal of Florida Studies* special edition, Bateson might suggest that the humanities can offer a sustainable future by inviting participants to see larger patterns of interactions in an ecology of mind. If Bateson's advice seems abstract, it may help to return to Miami and look at a specific example of what Bateson is suggesting: the work of eco-artist Xavier Cortada, who is slowly pointing Miami Dade towards an ecology of mind with his Reclamation Project/Native Flags rituals.

I first saw a permanent installation of Xavier Cortada's Reclamation Project at the Miami Science Museum. The installations includes over a 1,000 clear plastic cups evenly placed apart from each other in rows attached to the exterior wall of the Museum's outdoor gardens. The cups are attached to the wall with simple black binder clips and concrete screws. Surprisingly, red mangrove propagules grow slowly inside each cup until they are eventually replanted as seedlings into a coastal wetland.

The installations started when Cortada painted a mangrove mural on the concrete columns of a highway overpass on Interstate 95 in downtown Miami. In 2006, Cortada revealed his first mangrove installations of tiny cups at the Bass Museum, and today the little cups have found their way into classroom all across Miami-Dade County. Thirty mangroves are slowly growing in plastic cups on the window of my daughter's classroom, and my son's school

sports two installations inside and outside of the building.

The mangrove Reclamation Project is a ritual performance that is often combined with Cortada's Native Flags. Native Flags are green flags Cortada designed with a drawing of a leaf from a native south Florida tree. The Native Flags, like all flags, symbolically claim and declare the ownership of land. The Native Flags, however, claim land for nature. To ritually reclaim land for nature, each participant recites as they stake his or her Native Flag into the ground the words, "I hereby reclaim this land for nature!" The performance invites participants to discover nature again and imagine a south Florida before the levees and canals. Participants are asked to imagine a south Florida as an expansive wetland and acknowledge their role in the larger community's ecological health. Nature in Cortada's reclamation is *not* a romantic and pre-industrial nature outside our human interaction as it is imagined in pristine wilderness preservation.

Cortada's Nature is a space outside of a classroom with one small native seedling. If nature, like the wilderness areas, is separated from us, Cortada's tiny plastic cups remind us that we have a responsibility and relationship with nature, whichever nature we decide to encourage—the plastic cups or the mangroves.

In his lecture "It Used to Matter" given at the Esalen institute, Gregory Bateson argues that art, performances, and rituals used to matter because they connected us to a world of meaning and a world of pattern. Now, Bateson suggests art does not matter the way it used to because it gets reduced to mere things and is used to sell products. The rituals and sacraments of participation in a dynamic interconnected world are lost as our civilization slowly marches to an ecological wasteland of concrete things. If Goodell's predictions for Miami are to improve, then perhaps Bateson's ritual and sacraments of interconnections have returned in Cortada's Reclamation Project /Native Flags.

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