Cybernetics, Ethos, and Ethics: The Plight of the Bread-and-Butter-Fly

Kristie S. Fleckenstein

"Crawling at your feet," said the Gnat (Alice drew her feet back in some alarm), "you may observe a Bread-and-butter-fly. Its wings are thin slices of bread-and-butter, its body is a crust, and its head is a lump of sugar."

"And what does it live on?"

"Weak tea with cream in it."

A new difficulty came into Alice's head. "Supposing it couldn't find any?" she suggested.

"Then it would die, of course."

"But that must happen very often," Alice remarked thoughtfully.

"It always happens," said the Gnat.

—Lewis Carroll

The dilemma of Lewis Carroll's bread-and-butter-fly is an apt metaphor for this cybernetic age. When eating to sustain its life, a bread-and-butter-fly dips its sugar cube head into weak tea and cream only to dissolve and become part of that which it eats. To survive, it blurs its own boundaries, which means that its identity as a bread-and-butter-fly disintegrates. We, too, are bread-and-butter-flies; we live as and amid boundaries that materialize, shift, and disappear, only to rematerialize in new forms. Donna Haraway offers the figure of the vampire as a trope for this troubling time in which categorical clarity and sharply demarcated lines of origin are "polluted" (Modest 214–17). Pierre Lévy, drawing on Gilles Deleuze, refers to our blurring borders as the deterritorialization of subjectivity and reality, rendering both nomadic and tangential (29).

Johndan Johnson-Eilola claims that we live "in a cloud of data—the datacloud—a shifting and only slightly contingently structured informa-

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tion space" that is both symbolic and material (4). So we experience this phenomenon of shifting borders in our textual and corporeal lives. Textually, the pervasive track changes option in Microsoft Word and the quotidian interactivity of cyberspace disrupt our tidy categories of ownership and identity. Novels composed in various hypertextual formats, such as Michael Joyce and J. David Bolter’s Storyspace, or hypermedial poetry offered through John Cayley’s *Indra’s Net*, destabilize the traditional separation of reading and writing, reader and writer. Through the click of a mouse, readers can re/write a poem, a story, or a branch of a story, confusing any sense we might have of original text, author, and reader. Going one step further, the recent phenomenon Gaia Online, which bills itself as the newest anime role-playing community, offers synchronous and asynchronous narrative adventures that unfold as participants jointly create characters and plot points. Coupled with private messaging, gaming, and avatars, Gaia Online dissolves in multiple ways the boundaries among contributors and among reading-writing, speaking-texting identities. What evolves is neither writer nor reader, but “wreader,” an identity that renders permeable the previously rigid identities established by the perfect binding and material weight of a codex book (Ryan 12).

Nor is the bread-and-butter-fly phenomenon limited to textual experiences supported by digital technologies, either stand alone or linked in an array of networked communication nodes. The phenomenon of boundary confusion is manifested in our corporeal lives as well. My mother’s recent bout with pneumonia resulted in her temporary alliance with an oxygen tank that became an integral part of her physical existence. Her body boundaries spun out into clear, plastic tubes, linking her like a snaky umbilicus to a life-giving oxygen tank on wheels. Lifestyle and family interactions stuttered, stopped, and reconfigured themselves to accommodate my mother’s new body, new identity. Similarly, a niece’s long-desired pregnancy blurred the boundaries of her body identity, for she could no longer easily separate her subjectivity from that of her developing child. My own children marvel at ultrasound pictures tracking their gestation, tracing the extent to which they and I were at one time indistinguishable. At fifteen, my older daughter now struggles to institute in stark terms just such a separation, realizing, even as she does so, the degree to which we are intertwined. On a larger, more frightening canvas, we see the uncertainty of shifting and dispersed boundaries enacted in the current conflict in and occupation of Iraq, where “friendlies” and “hostiles” cannot be ascertained with any accuracy or permanency. Experts
suggest that veterans returning from active duty in Iraq will contend with the lingering, psychological effects of those blurred boundaries. The dilemma of the bread-and-butter-fly is not just an episode in an amusing children’s story; blurred boundaries are not merely interesting bits of intellectual play. They are not limited to our interactions with digital or analog technologies. Instead, the reality of the bread-and-butter-fly is life and death, fact and fiction, truth and lie.

Characterized by slippage and dispersal, the poetic, rhetorical, and material realities of this cybernetic era refuse to reside within discrete, inviolable borders. No realm of life is exempt from this boundary confusion. Johnson-Eilola argues that the changes associated with datacloud living “take hold” in the “real world—on the street, in the workplace, and in the home,” permeating all aspects of existence (3). As these realities shift and reconfigure, they raise a host of philosophical questions and dilemmas. Preeminent among them is the status of good character and ethicality. If we have no stable boundaries, no stable reality, and no stable subject, how do we judge whose “voice,” as well as whose reality, resonates with the greatest ethical authority, the greatest “good character”? In a reality founded on shifting sand, on what rock do we build our belief, our life choices, and our ethical actions?

In this essay, I argue that we can fruitfully address questions of good character and ethicality in this bread-and-butter-fly age through an amalgamation of Aristotelian ethos and Batesonian cybernetics. Viewing ethos through the lens of cybernetics offers the concept of cyberethos, which provides a robust framework for addressing good character and determining ethical behavior in an era that destabilizes both. Through cyberethos, we recognize the fluidity of identity while simultaneously committing ourselves to an ecological ethics. That ethical stance requires us to take responsibility for the embeddedness of good character within a material context permeated by nonlinear time. Cyberethos calls us to act on and judge our inescapable dispersal across osmotic rhetorical and material borders because good character and virtuous behavior are mutually linked. I begin my construction of cyberethos with Bateson’s concept of a living system, rereading Aristotle’s ethos as a “difference that makes a difference.” I then turn to the material constraints of Bateson’s cybernetics, highlighting the permeability of life lived and life spoken in Aristotle’s ethos. I next map classical ethos according to cybernetics’s nonlinear time, arguing for the importance of nonlinear cause and effect in cyberethos. Finally, I conclude with the ethical stance that evolves out of this cybernetic reading of ethos, illustrating how
cyberethos provides guidelines for an ecological ethics in a bread-and-butter-fly world.

**Bread, Sugar, and Weak Tea: *Ethos* as a Living System**

Fused with cybernetics, Aristotle’s account of persuasion by good character offers fruitful ground for theorizing issues of identity and ethical behavior in a cybernetic era. As Aristotle says, via George Kennedy, *ethos* is persuasion through good character and occurs “whenever speech is spoken in such a way as to make the speaker worthy of credence.” “[T]he controlling factor in persuasion,” *ethos* resides in spoken speech, which, at this point of the *Rhetoric*, refers to thought and content, not style and delivery (1.2.4). However, in spite of this seemingly straightforward account, *ethos* defies Aristotle’s struggles to taxonomize it neatly. In an adumbration of bread-and-butter-fly realities and subjectivities, Aristotle’s *ethos* morphs across borders, resisting all efforts to hold it stable. In this section, I explore the ways in which *ethos* can be interpreted as an information system, a living network consisting of rhetor, text, audience, and context. It functions as a difference that makes a difference and offers insights into controversies swirling around online identities.

Cybernetics, a term reclaimed in 1948 by MIT mathematician Norbert Wiener to describe a new probabilistic theory of messages, is a science devoted to investigating questions of control and communication via a theory of messages:

> It is the purpose of Cybernetics to develop a language and techniques that will enable us indeed to attack the problem of control and communication in general, but also to find the proper repertory of ideas and techniques to classify their particular manifestation under certain concepts. (*Human* 17)

Society can only be understood by a study of messages between “man and machine, between machines and man, and between machine and machine” (16). Simply defined, cybernetics is the theory that any entity—machine, human being, society—is constituted and reconstituted by the flow of information throughout transacting and circular pathways by which messages communicate content about the system and ambient environments. An entity exists only as long as those pathways exist. However, neither pathways nor information exists independent of or prior to the other. Weiner humorously rephrases the hen-egg debate to
characterize this circularity. Neither the hen nor the egg comes first, Weiner says. Instead, the hen is the egg’s way of creating another egg (God 35). System and pathways are mutually constitutive, both cause and effect at the same time.

This mutuality depends on a concept of information as “news of difference.” An early contributor to the post-World War II Macy Conferences on cybernetics, Gregory Bateson defines information as “the differences that make a difference” (Steps 459). We live awash by an infinite number of potential “facts” that are impossible to “know” in toto. Therefore, we engage in a filtering and a selection process. What gets through the filter(s) is difference: the differences that have value for the particular system in which we are immersed. To illustrate, the Trobriand Islanders in New Guinea, Bronislaw Malinowski tells us, do not see resemblances between mother and child or between siblings. Children resemble fathers, and two brothers can resemble the father, but not each other. Similarities between mother and children, perceived by outsiders, do not constitute differences that make a difference in Islanders’ system (Bolles 107). But these resemblances (significant aspects of an unknowable reality) do not exist prior to the kinship system within which they are significant. Nor does the kinship system exist outside of the resemblances. The two create each other. Any system comes to be, becomes a something, by means of the valuation of differences because a system is an array of relationships that exists through those differences. Therefore, it is impossible to define “system” before defining “difference”; but “difference” cannot be defined outside of its “system.” It is in and through difference that a system evolves, and that system continues as long as the valuation of difference remains credible.

Considering ethos through this cybernetic lens reveals that good character also evolves through an analogous circular process, as its constitution through prudence, virtue, and good will indicates. Aristotle tells us: “There are three reasons why speakers themselves are persuasive, for there are three things that we trust other than logical demonstrations. These are practical wisdom [phronesis] and virtue [aretē] and good will [eunōia]” (2.1.5). Prudence, virtue, and good will serve as the significant differences by which ethos can exist. But, paradoxically, these elements cannot exist prior to the instantiation of ethos, which is necessary for prudence, virtue, and good will to be identified as significant. Thus, we have the circularity of cybernetics: ethos is dependent on a certain configuration of phronesis, arete, and eunoia, while that configuration is dependent on ethos. The manifestation of loops (prudence, virtue, and
good will) and the creation of the system (ethos) are simultaneously intertwined processes.

To illustrate, in his cybernetic account of genetics, Bateson argues that “[t]he tissues of a plant could not ‘read’ the genotypic instructions carried in chromosomes of every cell unless cell and tissue exist, at that given moment, in a contextual structure” (Steps 153–56). So, too, with ethos. Members of a discourse situation cannot “read” each other, cannot regard each other as prudent, virtuous, and of good will, unless they exist at that moment as part of the same ethos. Thus, ethos does not construct itself in response to the dictates of a solitary displaced actor. No single element of a rhetorical act composes itself autonomously. Instead, it evolves on the basis of the flow of information, enabling rhetor, audience, place, and language to create each other mutually through the establishment of relationships called prudence, virtue, and good will, adapting to one another as a means of maintaining the constancy of those relationships. They render each other and the place they inhabit persuasive. Then they negotiate pathways of information so that the good character of ethos is maintained. As both cause and effect, ethos cannot be reduced to an essence or located in a single facet of any rhetorical act.

A cybernetic lens reveals the degree to which the circularity of classical ethos is reliant on subsystems. Cybernetic systems, even those of single-celled organisms, include subsystems, relationships nestled within relationships. The subsystems consist of an interconnected network of feedback and feedforward loops so that information in one circuit is always about information from another circuit. For example, consider the tangle of subsystems in a simple act of word processing. Meaning spirals through transistors, binary machine language, alphanumeric assembly code, programming language, finally manifesting itself in the icon of the flashing cursor. The words and images that materialize on the screen are statements about the loops nested invisibly within them, subject to the discontinuities permeating the languages and the pathways by means of which those languages constitute themselves. The differences that matter at one level become messages within the system (that is, create new relationships) at a different level, feeding into the system to change it or reconfirm it, maintaining the system by the process of its own self-constitution.

This aspect of cybernetics highlights the fact that good character results from an ensemble performance. It exists in and through the flow of messages, a flow that is the system and constitutes the system simultaneously. We cannot point to any one part of the array of pathways
and say, “here lies good character,” because it is a property of the entire configuration, situated only in its own flow and traceable back to no single causal force. Slippages in good character can be traced back to similar recursive connections among its constitutive subsystems. The adaptation of a speech to the mood and the character of the audience demonstrates the importance of overlapping loops in classical ethos. The essential thrust of Book 2 of the Rhetoric, Kennedy claims, is the need of the rhetor to perceive and conform to an audience’s ethos. Quoting William Grimaldi, Kennedy says that Aristotle shows “the speaker how his ethos must attend and adjust to the ethos of varied types of auditors if he is to address them successfully” (164), highlighting the feedback and feedforward of rhetor’s and audience’s ethoi. Kennedy elliptically acknowledges the moebius quality of this aspect of ethos in a footnote where he quotes Martin Heidegger. Heidegger argues that Aristotle’s analysis of emotion in the second book of the Rhetoric constitutes the first systematic treatment of “the everydayness of Being with one another” (124). Publicness, Heidegger explains, has its own way of Being which belongs to a “they,” but also requires “moods and ‘makes’ them for itself” (qtd. in Kennedy 124). The rhetor, then, must do two things. She must consider the moods she needs to create, and she must consider the moods out of which she creates: “It is into such a mood and out of such a mood that the orator speaks. He must understand the possibilities of moods in order to rouse them and guide them aright” (Heidegger, qtd. in Kennedy 124). Pathways overlap as they create themselves, feed differences into other pathways, and then become differences about those differences, feeding back into those initial pathways.

This cybernetic reading of ethos offers us cyberethos, and cyberethos highlights three qualities. First, it underscores the inseparability of the pisteis. Although Aristotle characterizes ethos, logos, and pathos as separate modes of persuasion, each pistis is implicated in the establishment of the other. Thus, cyberethos cannot be disconnected from logos and pathos. Second, the permeability of subsystems means that it is not just the good character of a thought, an utterance, an individual, a culture, or a species that is implicated in cyberethos; it is the good character of the entire array of pathways in action. C.D.C. Reeve neatly captures these snarled recursive relationships when he notes that, in fifth century BCE Athens, the soul of the politikos is indivisible from the soul of the city state (203).

Our inability to locate cyberethos in a single aspect but only in the system provides a valuable frame for investigating a parallel slippage in
good character within our bread-and-butter-fly age, especially in today’s electronic networks. For instance, one of the unique and problematic products of cyberspace has been the evolution of the avatar, an online identity that a user creates to participate in a computer-generated and computer-mediated world. Ranging from discourse-based MOOs (an object oriented multi-user domain, or MUD) to three-dimensional virtual reality interfaces, computer-generated participant worlds require users to craft an identity or a character that then interacts within a prescribed environment according to prescribed rules. As an identity inhabiting a virtual realm, the avatar is the “site where a user brings, modifies, problematizes, and constructs a sense of self distinct from others” (Gromala 216). Yet, because an avatar is a graphic-discursive representation, it, like cyberethos, is simultaneously an “I” and a “not I,” where the separation between “copy” and “original,” rhetor and citizen, blur. Diana Gromala notes that, through avatars, “human agency is projected and reflected back to influence the user’s subjectivity” (216). Such blurring leads Alvy Ray Smith, cofounder of Pixar Animation, to urge actors, seemingly threatened by their unauthorized representation in and through digital technologies, to get an agent to protect “their” avatars, their digitized presence. By explicitly fusing virtual reality (VR) and real world (RW) identities into “animator-actor” and then by ignoring the movement across and the implications of the hyphen, Smith morphs questions of agency and identity into questions of commerce. The key issue for animator-actors will be one of money. Who will command the greater salary: the avatar or the actor (78)?

The constitution of cyberethos as the flow of information along an array of pathways invites us to reconceive cyberspace identity as similarly crafted out of impinging loops of significant differences. From this perspective, we cannot so cavalierly reduce human and avatar identity to intellectual property and contractual commercial negotiations, complex as those issues might be. Because subsystems are lodged within and constitute a larger system, we can only artificially separate life-on-the-screen from life-before-the-screen, the life-of-the-rhetor from the speech-of-the-rhetor. Treating online activities as if they were merely words, pixilated marks on a screen, erroneously isolates one loop of this complex array, leading to the temptation to act without accountability. The seduction of cyberspace, Sherry Turkle notes, is the lure of acting irresponsibly. If there is no investment, no permanence—merely transient marks on a screen—then there is no need to attend to one’s reputation (see also McDonough 865). However, cyberethos as a living
system reveals the falsity of this isolation. What occurs on the screen cycles back to what happens in front of the screen in the feedback/feedforward phenomenon of cyberethos, tying the soul of the user to the soul of the avatar.

As a permeable ecology of information pathways, a cybernetic ethos, a cyberethos, emphasizes that a change in one loop of an ecology cannot be restricted to that single pathway. Rather, it is dispersed throughout the ambient network. In addition, cyberethos exists only as long as those information pathways exist. It is a living system, which means that it does not exist as *a priori* substance, only as a dynamic ecology. Neither information pathways nor cyberethos is independent of or prior to the other. Cyberethos and pathways are mutually constitutive, both cause and effect at the same time.

**Sugar-Cube Heads: The Material Limits on Cyberethos**

The existence of cyberethos as a "living system" highlights the material as well as the discursive forces at play in the creation of good character, pointing us to the importance of bodies, places, and communities, both local and global, in the constitution of good character. The role of discourse, of coding in its various permutations and combinations, dominates accounts of cybernetic realities and subjectivities, as well as Aristotle's description of *ethos*. It would be easy to reduce cyberethos (or any system) to a discursive or a textual construct: all life becomes lines of code; all cyberethoi are products of speech as it is spoken. Ostensibly, Aristotle has something like this in mind with his comment that *ethos* "should result from the speech, not from a previous opinion that the speaker is a certain kind of person" (1.2.4). Cyberethos, then, would be meaningful only as a discursive pattern. Potentially, anything that can be said can be perceived as virtuous. Such positioning resonates to Weiner's musings "that it is conceptually possible for humans to be sent over a telegraph wire" because the only essential (human) attributes are those that can be coded (and transmitted) as information (*God* 36). However, reading Aristotelian *ethos* through Bateson's cybernetic lens reveals that good character is comprised of more than the single level. The flow of information out of which good character constitutes itself is subject to the materiality of its performance and its medium, constraints that inform and are informed by similar material constraints in Batesonian cybernetics.5

As Bateson points out, cybernetics is the science of constraints (*Steps* 399). It does not operate and explain by means of causal relationships. It operates and explains by means of specifying constraints. The materiality
of cybernetic information is one such constraint, tying us to material sites and media, creating an identity that exists within the uncertain interface between discursivity and materiality, neither one nor the other, but both. The “difference that makes a difference” is a double-sided, double-faced process in which the ordering of language and the flux of reality constrain each other. In an elaboration of her father’s work, Mary Catherine Bateson explains that physical reality—blood, bone, and earth—can be separated from the constitution of difference only at the level of description. All difference exists within and through the physical world: “We can meet the two [materiality and difference] only in combination, never separately” (Bateson and Bateson 18). Difference requires arrangements of matter, areas where materiality is “characterized by organization which permits it to be affected by information [news of difference] as well as by physical events” (18). On the other hand, physical reality requires the ordering of information. To be “known,” however partially, however constructedly, reality must be represented. It must be coded, which by its nature affects that which is coded. Code and reality are fused. As Carol Gigliotti argues, even digital existence, the ultimate coded existence, is about bodies as well as codes; therefore, bodies must be central to our discussions of cybernetic subjectivities and ethicality:

At the heart of all ethical and aesthetic investigations is the fact of our embodiment. . . . The point about the current insistence on the centrality of the body in discussions concerning aesthetics and ethics is not that we must transcend this envelope of the skin in order to act morally, but that the body allows us to be of and in the world at the same time. (55)

N. Katherine Hayles concurs. A hacker might dream of a life and of information free from material constraints, from what Case, William Gibson’s protagonist in Neuromancer, so disparagingly refers to as the “meat.” But “for information to exist, it must always be instantiated in a medium [. . .]. [A]bstracting information from a material base is an imaginary act” (75).

Considering Aristotelian ethos through a cybernetic lens directs our attention to a similar reciprocity between materiality and discourse. According to Aristotle, ethos is comprised not only of phronesis and arete, but also of eunoia, an element of pathos, or emotions, which ties ethos to the constraints of the material, to life-lived, not just life-spoken. Eunoia, or the feeling of good will between rhetor and audience that Aristotle claims is an element of pathos, is achieved by means of such
material concerns as neatness, conviviality, and sympathy (see 2.4.11–29). The borders between the pisteis of ethos and pathos are not discrete; they are permeable. Thus, bodies, the locus of pathos, impinge on good character. Any consideration of the kinds of character an audience might possess requires that the rhetor contemplate what the auditors are like “in terms of emotions and habits and ages of life and fortune [tyche],” Kennedy says in his introduction to Book 2. Eunoia is firmly lodged in life-lived: “A friend is one who loves and is loved in return, and people will think they are friends when they think this relationship exists mutually” (2.4.2). An audience responds with friendliness to a speaker who is pleasant, good tempered, sympathetic, and appropriately attired. Thus, ethos is not discourse divorced from the parameters of the material. It is language and life combined, constrained by both. As such, neither identity nor character stops at a rhetor’s skin or a city state’s gates. It extends to include all the pathways communicating information, thereby constituting ethos as a system—inside and outside arbitrary boundaries of flesh, medium, and environment.

Cyberethos, then, is a living system materially constrained, and as such it offers insight into ethical dilemmas resulting from the permeable borders between words and flesh, especially within digital environments. The 1992 rape in cyberspace and the ensuing discussion over the ethicality of that rape offers an apt illustration of a bread-and-butter-fly experience that can be beneficially analyzed from the perspective of a cyberethos. I return to an incident more than a decade old to underscore the degree to which the questions raised in that situation continue to plague our cybernetic realities. While the digital technologies—or the interfaces mediated between technologies and users—may have radically changed in the last decade, the dilemmas that plagued LambdaMOO in 1992 align with dilemmas my fifteen-year-old daughter confronts on Gaia, established in 2003, as she engages in creating and responding to narrative actions written by participants linked only by an interactive website. While Anna has the power to build and insert a character into a storyline, she cannot control what other participants might do to or with her character. Cyberethos provides a robust framework for critically analyzing online choices and the justifications for those choices.

In 1992, in LambdaMOO, one of the oldest existing MOOs, an avatar named Mr. Bungle used a voodoo doll, a phantom program that co-opts a fellow participant’s character by overwriting that character’s discourse, to control the actions of two other avatars in the MOO. Mr. Bungle forced these enslaved characters to perform a variety of sexual acts on him,
themselves, and one another. Even after he was ejected from the room, Mr. Bungle continued the assaults until he was finally barred ("toaded") from the system and denied reentry, a kind of virtual death sentence (Dibbell 239–40, 245; Turkle 249–54). One of the victims later responded to the assault by demanding Mr. Bungle's "virtual castration" while simultaneously complaining about his lack of civility (qtd. in Dibbell 243).

During an ensuing online discussion of virtual rape, one self-styled MUD rapist defended the activity. Virtual rape, he says, is something done "in a free non-meaningful manner," something that although it is "plain out sick" is done to have "fun" (qtd. in Turkle 253). VR "hurts" no one; therefore, rape should not elicit censure. However, throughout the incident and the follow up dialogue, VR and RW tangle in inextricable ways, from the equation of lost civility with virtual rape to the confusion of victims. As the self-styled MUD rapist reveals, "There are other MUDs where we have done the same thing and even though the victim didn't like it, the GODs told the victim 'too bad, it's not like they pkilled [player killed] you'" (qtd. in Turkle 253). Obviously, in contradiction to his previous comment in the same posting, the discussant is aware that VR rape does hurt the victim, but it is an offense less heinous than pkilling the victim.

Within this discourse and within these actions, where do we locate identity or good character? Do we focus on the actions and discourse in the virtual sphere? Or do we turn our attention to the individual, embodied user who, willy nilly, brings to that virtual sphere the cultural predispositions, assumptions, and prejudices that hold sway in the RW? From a cyberethos perspective, the answer is no to each of these questions. We cannot locate identity or good character within the avatar because the avatar exists only by means of a user's graphical-discursive transactions within a particular environment. Nor can we locate identity within the embodied user—similar to a rhetor's life outside of the discourse—because we do not know the embodied user except through the avatar's discourse. Rather, identity consists of a mutually constitutive cyberethos materially constrained. Assigning identity to or determining good character based solely on the avatar, the user, or the discourse compromises the integrity of the living system. Cyberethos points us, instead, to the entire ecological context as the site for identity and good character.

Cyberethos is sited on the cusp between the life-lived and the life-spoken. It is only when we understand good character as both rhetorical and material that we can understand why one victim mourns both the rape
of the discourse, through the loss of civility, as well as the rape of the avatar, through that uncivil discourse. It is only when we see good character at the level of a rhetorical-material nexus that we can understand why the individual defending rape on a listserv would offer a postscript apology for his grammatical errors and formatting problems, issues of style and delivery that the user implicitly feels undercut the persuasive appeal of his discourse. RW and VR twist into a mobius strip where one side cannot be distinguished from the other. As journalist Julian Dibbell notes, the complaints about Mr. Bungle’s incivility as well as calls for his dismemberment, “[l]udicrously excessive by RL’s [real life] lights, woefully understated by VR’s” make “sense only in the buzzing, dissonant gap” between RW and VR, or in the buzzing, dissonant gaps within which the rhetorical and material levels of a cyberethos organize themselves (243). Cyberethos requires us to attend to the material elements of any construction of identity, of good character. From the perspective of cyberethos, any identity that ignores or erodes sensitivity to material constraints is unethical.

"It Happens Always": The Impact of Time on Ethos

The material constraints on cyberethos highlight the performative aspect of any system of good character: identity exists within a span of time as a span of time (and it depends on the medium of the moment). Reading Aristotelian ethos through the lens of cybernetic time offers insight not only into the performative aspect of cyberethos, but also into the continued existence of cyberethos across performances, balancing evanescence with permanence, improvisation with habit. Time impinges on all aspects of the living system; it constrains the evolution, survival, and death of identity, highlighting a similar dynamic in bread-and-butter-fly realities that evolve and dissolve.

Cybernetic time is marked by its nonlinearity, a characteristic that directly impinges on the constitution of good character. Cybernetic systems are premised on nonlinear temporal patterns and, thus, are irreversible in time. Dating back to the sixteenth century, time has been perceived as linear and sequential, a perception strengthened by the evolution of the clock that parsed experiential time into discrete units. Undergirding linear time are two linked, although counterintuitive, concepts: cause and effect proceed in an orderly fashion; and time, because of this orderly progression, is reversible. Newtonian physics hypothesizes that every event is caused by some specific initial condition of particles in the universe. That initial condition causes an equal effect
that then becomes a cause of another equal effect, proceeding in a retraceable chain from cause to effect. If we can determine the precise initial conditions of an event, then we can predict the exact outcome by tracing the intertwining strands of cause and effect in the rope of time. Theoretically, if all initial conditions—the position and momentum of all particles—can be ascertained, then we can discover everything that will occur or that did occur, back to the first cause of God as the prime mover. From this orientation, neither past nor present nor future is relevant because we are living in a present moment that encompasses past (initial conditions) and future (determined outcome). In a universe governed by immutable laws of motion and of linear cause-effect relationships, time is essentially reversible.

From the perspective of linear time, if we identify the initial cause or the starting point for good character, then we can predict and control its persuasive effect. However, cybernetic systems do not function according to linear time. Rather, both are probabilistic. In *The Human Use of Human Beings*, Wiener writes that the groundwork for a probabilistic theory of messages rests with the discovery that initial causes cannot be determined with anything except probability. Uncertainty is an inextricable element of our physical and intellectual existence. Therefore, without the ability to ascertain the precise nature of an initial event, we cannot predict ensuing events with any accuracy. The process by which a user accesses a website (or any hypertext) and its various links illustrates the difficulty of locating an initial cause. A user need not approach a website from its homepage, its designated starting point, and then proceed in an orderly fashion from link to link. Instead, a user can enter that site through the “back door” (or the “side door”) by connecting to it from a second website or directly accessing a link site, entirely frustrating an effort to control a user’s position and momentum. Nor can the website designer predict or direct the way in which a user might meander through the links of a site (or whether the user clicks in and out of that site). Unable to determine a starting point, the designer cannot extrapolate the nature of the ethos a user creates of the site and of the site designer. This process is rendered even more complex when we factor in the nonlinearity of cause and effect in cybernetic systems.

Instead of a small cause resulting in a small effect, small causes in cybernetics can result in very large effects. A butterfly flapping its wings in Buenos Aries can contribute to a hurricane off the coast of Florida (Gleick). The change in a single digit of code (or the bumbling flight—or desiccated corpse—of a moth) can crash programs. The appearance
and disappearance of links and websites reconfigure the Internet. Capturing the volatility of cybernetic time and cybernetic identity, Peter Lunenfeld calls this the digital "state of unfinish": "The digital dérive [drifting] is ever in a state of unfinish because there are always more links to create, more sites springing up every day, and even that which has been catalogued will be redesigned by the time you return to it" (10). The dissolution and resolution of authorial ethos in cybernarratives highlight the way in which minimum causes can have maximum effects in cyberspace's state of unfinish.

In the fifteenth century, the rise of moveable type and the increasing stability of the printed text marked a parallel rise and increasing stability of the author position. At one point in both critical history and in the evolution of individual creative works, to know the poem, one had to know the author because, as fifteenth century European copyright laws suggested, the author "owned" the poem. Now, the good character of owner and ownership are continually short circuited, theoretically by the inroads of postmodernist stances and concretely by the experience of cybernarratives, which deliberately court nonlinear cause and effect patterns. For example, via online, interactive sites such as Gaia or through software such as Storyspace—a hypertextual narrative program that invites readers to intervene by contributing to, subtracting from, or rearranging the text—a small contribution by a single user holds the potential to reconfigure the authorial good character of the entire site. Small inputs result in maximum outputs.

Hypertext novelist Carolyn Guyer describes this phenomenon. She notes her pained recoil when a writer, one she guiltily deems less proficient than she, enlarges her hypertext novel at her invitation in ways Guyer finds unsatisfactory. In spite of her desire to have readers add to her work, Guyer is unprepared for the extent to which one small addition to a much larger array of lexia (text blocks) results in the reformation of the good character of the entire site. Her visceral rejection functions on two levels: first, she rejects the specific textual emendation, and, second, she recoils from the massive reconfiguration of the entire work effected by that specific textual addition.

Reading Aristotelian ethos through the lens of cybernetic times offers us a framework for understanding the volatility as well as the permanence of good character. Conceived cybernetically, Aristotle's ethos can be interpreted as nonlinear, lodged as it is within the realm of probabilistic or contingent knowledge. Rhetorical time is in a similar state of unfinish, and Aristotelian ethos is subject to the same difficulty in determining its
initial conditions. James Baumlin and Tita French Baumlin highlight this problem. They describe the evocation of *ethos* as a series of feedback/feedforward relationships between rhetor and audience that are analogous to the circularity of cybernetic time. Drawing on Freudian psychology, they argue that *ethos* is a projection of the listener/reader’s superego. The listener/reader brings an array of predispositions, biases, expectations, and orientations to the speech act. It is the baggage she carries. The rhetor then offers cues that transact with these predispositions to summon forth a particular shape from the listener/reader’s expectations, which the audience member validates by sampling the rhetor’s cues. Within this temporal circularity, we cannot determine initial conditions; therefore, we cannot predict the specific evocation that *ethos* will take, if it takes any. *Ethos* depends on an audience’s predispositions, as Baumlin and Baumlin point out, but those predispositions exist as potential, not as actual, systems. The specific predispositions contributing to the evocation of *ethos* do not exist until that *ethos* is evoked, harkening back to the constitution of *ethos* as a living system. Predispositions come to being within the evocation of the entire array of information pathways. The concept of initial conditions—as something existing outside of the system—is foreign and inapplicable to *ethos*. We cannot point to a time prior to the evocation of *ethos*, or to an event that exists “before” *ethos*, because neither time nor event is relevant outside of network of relationships constituting *ethos*. Instead, *ethos* comes to be within an instant as an instance (Metzger).

In addition to the impossibility of ascertaining the initial conditions of *ethos*, overlapping time in rhetoric allows an effect to be its own cause. A circular process is at play whenever communication occurs. When a rhetor offers something intended as serious, it is because she perceives herself as serious. However, if the audience interprets the cue as amusing and laughs, the rhetor sees that response as a rendering of herself as amusing. She accepts that judgment and incorporates such humor as part of her system of *ethos*, a process that creates of the audience an ethical construct. She creates her system of *ethos* because of the audience’s *ethos*, offering cues that validate both the audience’s construction of her newly realized *ethos* and her construction of the audience’s good character. All of this takes time for news of *ethos* to travel throughout the pathways. In fact, a system of *ethos* evolves out of the lapse of time, allowing for and necessitating the minute adjustments that contribute to the maintenance of the entire performance. Thus, because time loops back on itself, a system of *ethos* can paradoxically give birth to itself.
This cybernetic reading of Aristotle’s *ethos* returns us to the intricacies of good character and enables us to reframe ethical authority. For example, the interactivity of cyberethos is an integral aspect of cyberspace narrative. Thus, the concept of a master text or a master writer loses its good character because there is no master text or master writer. Readers become writers as easily as they become readers—wreaders—and out of the ashes of one evolves the substance of the other. The location and identity of wreader in Storyspace, for instance, shifts with time (and with space) depending on the lexia (text block) viewed, the time viewed, and the particular user interacting. On Gaia, identity shifts from story thread to story thread, from forum to forum.

Furthermore, its own self-organization changes the grounds and conditions of a wreader’s existence. The evocation of a cyberethos becomes information that then feeds back into the system, simultaneously constituting it and setting out the terms of its own degradation. Creating an interactive hypertext novel evokes a particular authorial identity, one that Barbara Page describes as a feminist literary identity and containing the seeds of its own dissolution. When a wreader responds to an invitation to write to an author’s work, the initiating authorial identity no longer exists, just as the locus of ownership and the stability of the text are rendered problematic. The process of constructing an identity based on the openness of interactivity means that the act of interacting will change the nature of identity. The performance of such a cyberethos requires its own disappearance: the sugar cube head dissolves in the weak tea.

Finally, the dissolution of one identity yields a space for the constitution of another. For instance, within cyberspace, authorial identity and master text yield to the good character of the “wreader” and the “restive text.” Like the slippery temporal separation between Aristotle’s audience and rhetor, the temporal nonlinearity so characteristic of cyberspace interactivity destabilizes the boundaries separating reader and writer, creating the authority of the wreader out of these shifting boundaries. Similarly, Page argues that hypertext’s state of unfinish manifests the restive text, one that refuses a point of reference stable across either time or space. The dissolution of identity at the hypertextual site resolves itself into a cyberethos whose good character is predicated on that very dissolution, a good character that challenges the traditional authority of patriarchal structuring. To slightly redirect Johnson-Eilola, such an approach moves identity and ethics “out of simple cause and effect toward an understanding of culture and technology as contingent, multi-
dimensional, fragmented, and constructed in local uses rather than universal determinations” (9).

“Then It Would Die, Of Course”: Cyberethos and Ethics
As a living system, constrained by both materiality and nonlinear time, cyberethos provides a framework for understanding identity and good character in a bread-and-butter-fly age. But it provides more than a framework, important though that might be; cyberethos also offers us guidelines for ethical action. Cyberethos spins out of the significant differences constituting its own system, leading us to a definition of ethical judgment that relies on three strictures: the need to discern the fluid, dynamic, and constructed nature of a cyberethos in which we are producer and produced; the need to ensure the continued fluidity of those boundaries by taking responsibility for them; and the need to recognize the material and temporal constraints imposed on and enacted by any cyberethos. From the stance of cyberethos, we are called to act on and judge our inescapable deterritorialization, materiality, and temporality, all of which necessarily deploy good behavior as well as good character throughout the constantly shifting pathways of a system. Like cyberethos, we cannot reduce ethics to language severed from life or life severed from language, divorcing both from place and time. We cannot return to an autonomous subject, to a reader separated from a writer. Instead, we must account for the interactivity and destabilization of our lives and identities, finding in that interactivity and destabilization our ethical tenets. Cyberethos draws us to a cybernetic aesthetic, where beauty and goodness are implicit within the act itself, not in some intended effect (see Bateson, Sacred 253–57). As Aristotle explains, “we call complete without qualification that which is always desirable in itself and never for the sake of something else” (NE 1097a30).

Whereas cyberethos establishes a good character, a persuasive way of facing the world, ethics acts on that good character, a double process of doing and judging. To the Aristotle of Nicomachean Ethics, ethics is a performance, and that performance slips between judging and doing. It is a judgment in and of the doing, judgment as doing. Because ethics exist in the activity, the pleasure of a virtuous life is in the performance of virtuous acts (NE 1099a 10), not in the understanding of virtuous acts (see Engberg-Pedersen 121). Capturing this transactivity of ethics, Aristotle explains that possessing virtue or understanding of virtue is inseparable from acting virtuously: “for one who has the activity will of necessity be acting, and acting well” (NE 1099a 3–5). One cannot believe without also
Although ethics cannot be equated to cyberethos, neither can it be separated from it because they are part of the same living system. Cyberethos yields an ethical depth perception that enables us to assess virtuous behavior as we enact both behavior and judgment. It is an analytical stance that cannot be abstracted from the system it analyzes, for the judge is always a part of that which is judged as well as a part of the judgment. Good character and good action are situated in actively shifting pathways, the behavior of which yields an ethics of performance constantly morphing between doing and judging.

There is a pleasure in the freedom of constantly shifting, permeable boundaries, Haraway points out, and we should revel in that freedom of systemic self-creation, self-generation, self-adaptation. But simultaneously that pleasure requires that we take responsibility for the boundaries that we inevitably make and strive to maintain (Simians 150). With an acknowledgment of cyberethos as a living system that functions within the constraints of time and place, we can better understand the ways in which a Napoleon or a Hussein can be part of a system within which they and their actions are viewed as wise, virtuous, and of good will. Also, we can better understand our complicity in those systems. Through considerations of the flow of differences that make a difference, we can ask how a system becomes pathological, creating a cyberethos that becomes toxic to its own existence as a system, as in terrorism, racism, or genocide. On one level, a cyberethos generates its own identity, strives after its own self-continuation through the constant do-si-do of its constituent elements. What serves that balance, serves the system, and thus is virtuous. What is pathological—or unethical—is that which threatens the good character of that portion of a system. However, systems do not exist in isolation. They are tied to, constrained by, larger and smaller loops. What is good for cyberethos at one level can become toxic to the system at another. Thus, terrorism requires adaptive measures that will in effect destroy the larger system within which it is immanent. Like bread-and-butter-flies, its end is consumed by its means.

In addition to understanding the toxicity of a single loop in a larger system that is pathological to the whole, the ethical perspective we gain through cyberethos also enables us to understand instances where good character requires the death of the very system that gives it its existence. For example, in his 1974 speech for the Governor's Prayer Breakfast, Bateson tells the story of a group of Native Americans who were under siege to discontinue the use of peyote in their religious ceremonies. A leading anthropologist proposed to the tribe that he film their ceremonies
as a means to demonstrate the religious nature of the drug use. However, to allow the filming, which may have led to the continued legal use of peyote, the Native Americans believed that they would be destroying the integrity of the ceremony they wished to preserve. They refused to allow the filming. “In the story,” Bateson says, “the Indians perceive that it is nonsense to sacrifice integrity in order to save a religion whose only validity—whose point and purpose—is the cultivation of integrity. The Indians declined to save their religion on those terms” (Bateson and Bateson 75).

Cyberethos and the ethical stance that emerges from it offer us insight into and a framework for acting in the bread-and-butter-fly age. Cyberethos offers a means to unite ourselves in an ecology of good character, reconfirming/recreating our identity and connectedness within the larger systems that offer us life, and assuming responsibility for that identity and that life. Nothing is more monstrous, Bateson says, than the attempt to separate the mind from the body, the external mind with the internal mind: “When you separate mind [or cyberethos] from the structure in which it is immanent, such as human relationships, the human society, or the ecosystem, you thereby embark, I believe, on fundamental error, which in the end will surely hurt you” (Steps 470, 393). Marked by permeable boundaries, materiality, and nonlinear time, cyberethos demands that we link our survival (as a species and as rhetors) with our good character. There can be no survival without good character. To slightly misquote Bateson, “Arrogate all mind [cyberethos] to yourself, you will see the world around you as mindless and therefore not entitled to moral or ethical consideration” (Steps 468). The environment—the discourse situation—becomes ours to exploit. If the survival unit is interpreted as us and our loved ones against a hostile world, Bateson says, we will destroy the world and ourselves with our own hate. That which feeds us also consumes us. But cyberethos offers us a way out of the us/them dichotomy because at the moment of its evocation us and them are indivisible. Perhaps virtue, good will, and practical wisdom translate into communal and individual survival, which is, after all, the ultimate means of persuasion.

Ball State University  
Muncie, Indiana

Notes

1. The crossover between Aristotle and twentieth-century cybernetics has been explored by various scholars. See, for example, Lawrence William
Rosenfield’s examination of Aristotelian and cybernetic causality.

2. My project resembles in many aspects James Porter’s agenda in Rhetorical Ethics and Internetworked Writing, where he proposes an ethical framework—his rhetorical ethics—for addressing dilemmas raised by the phenomenon of internetwork writing. Porter’s rhetorical ethics, drawn from rhetoric and postmodern ethics, provides “guidance in the form of general principles . . . as well as in the form of procedural strategies” (xiii). However, I am concerned in this essay with cybernetic realities that extend beyond internetwork. Also, I arrive at my framework through a fusion of classical rhetoric, specifically Aristotle’s concept of ethos, and Bateson’s ecological cybernetics. The degree to which Bateson’s work aligns with postmodern thinking (see Lévy; Deleuze and Guattari) is beyond the scope of my argument.

3. Focusing exclusively on new information technologies, Barbara Warnick claims that neoclassical rhetoric, especially Aristotelian rhetoric, is unsuitable for exploring the challenges of this cybernetic era. She advocates, instead, the use of new critical theory. In contrast, other rhetorical critics have emphasized the usefulness of neoclassical rhetoric for theorizing a reality of blurred boundaries, turning to sophistic rhetoric (Ballif) or Isocrates (Welch). What these critics hold in common with Warnick is their dismissal of Aristotelian theory for understanding our current cybernetic reality. However, as I illustrate here, Aristotle, read through a cybernetic lens, offers unique insights into the nature and challenges of a bread-and-butter-fly reality.

4. See Guilbaud for the derivation and history of the term cybernetics.

5. The inextricability of form and content in Aristotle is illustrated practically in his Poetics and philosophically in De Anima through his concept of hylomorphism.

6. See Kang on the presence of racial prejudice within MOOs, as well as on the possibilities of cyberspace for furthering racial justice.

7. Time is an integral part of rhetoric. James Murphy defines rhetoric as “the study of the means for producing future discourse” (75); Aristotle discriminates between three kinds of rhetoric—epideictic, judicial, and deliberative—on the basis of time, associating each with a particular time: epideictic with the present moment, judicial with a past action, deliberative with a future action (1.3.4).

Works Cited


