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A biological approach to the rhetoric of emergent media

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A Biological Approach to the Rhetoric of Emergent Media

Abstract

Emergence theory and the rhetorical canons offer a novel approach and new insights into the evolution and function of new media and media in general. This analysis uses a biological approach to rhetoric and theories of emergence to explore how agents enter into and navigate within five different ecosystems—biology, news, religion, design, and media. The primary methodology is based on the five rhetorical canons—delivery, arrangement, memory, invention, and style—and three evolutionary terms—descent, modification, and selection. This original and progressive framework is successfully applied to the five ecosystems to better understand their evolution, function, and future. Searching for common strands in these ecosystems is the beginning of an ambitious inquiry into an "ecology of ecologies."

Introduction

Our key premise is that rhetorical theory and the rhetorical canon—the primary philosophical tools of communicators—is a highly useful analytical tool to study emergence theory and its relationship to the biological, media, design, news (or journalism), and religion ecosystems. Our vision also includes the notion that we can use the rhetorical canon to better understand new media and the aforementioned ecosystems as emergent phenomena. Combining rhetorical theory and systems biology thinking to the study of cultural and other ecosystems is a highly novel and promising perspective.

By emergence we are referring to the fact that complex systems self-organize and that their properties cannot be derived from, reduced to, or predicted from the properties of the components of which they are composed. All living organisms represent emergent phenomena because their properties cannot be derived from, reduced to or predicted from the properties of the organic biomolecules of which they are composed. We posit that in addition to living organisms, human language, culture, media, design, news (or journalistic stories), and religion are also emergent phenomena. Each is a complex system whose properties differ from those of the elements that make them up.

The biological ecosystem is defined as the system in which living organisms interact with each other and their physical environment. The media ecosystem is the system of media that interact with each other. The study of this ecosystem has given rise to the study of media ecology. The design ecosystem has been recently defined by Logan and Van Alstyne (in preparation) and consists of the elements that give rise to innovative products, services, methods, and systems. The design ecosystem consists of the following nine elements: designer, client, users, technosphere, creativity, design research, engineering resources, marketing, and management.

The news ecosystem views the production and consumption of news holistically: the public is responsible for the news they consume. It is also now possible to easily produce news and information because of digital technologies. The news ecosystem consists of the newsmakers and publicists, journalists, editors or producers, bloggers, and

readers (or audience) depending on whether the news medium is print or electronic. The religion ecosystem consists of prophets, theologians, clergy, believers or parishioners, religious texts, practices, ceremonies, and customs.

The Role and Range of Rhetoric

In many ways, the history of rhetoric and the development of the rhetorical canon parallel the development of human consciousness on this planet. Before writing, the alphabet, print, computing, or any other notational medium other than human memory, rhetoric was—and most rhetoricians would argue still is—the primary interface for the communication and cultural environments. We believe, however, that rhetoric is also the primary environment for the biological world. The primary text of the rhetorical canon more than 2,000 years later is still Aristotle's *Rhetoric*. Written in the middle of fourth century B.C., *On Rhetoric: A Theory of Civic Discourse* is the foundation of the five rhetorical canons.

> The fact is that Aristotle's approach—asking the right questions of each rhetorical situation—provides the basis for the five canons that would be codified in the Roman's Rhetorica ad Herennium: invention (inclusive of ethos, pathos, and logos), delivery, organization (inclusive of the forms of public address), memory, and style. Most of the theory that comes after him extends what Aristotle had to say; in very few cases are wholly new conceptualizations developed. (Smith, 2003, p. 106)

As the lively debate among rhetoricians writing in the *Rhetoric Society Quarterly* and dialoging at the Rhetoric Society of America conferences attest, "The range of rhetoric is wide" (Burke, 1969), and it contains the memory of the universal nature of human communication. Writing in his eloquent and prescriptive *The Rhetoric of Rhetoric*, Wayne Booth eloquently articulates the power and potential of rhetoric in the postmodern age:

> In short, rhetoric will be seen as the entire range of resources that human beings share for producing effects on one another, effects ethical (including everything about character), practical (including political), emotional (including aesthetic), and intellectual (including every academic field). It is the entire range of our use of "signs" for communicating, effectively or sloppily, ethically or immorally. At its worst, it is our most harmful miseducator—except for violence. But at its best—when we learn to listen to the "other," then listen to ourselves and thus manage to respond in a way that produces genuine dialogue—it is our primary resource for avoiding violence and building community. (Booth, 2004, p. xi-xii)

Indeed, if rhetoric can do all this, it can certainly inform our understanding of the new digital media, which differ technologically from the older legacy media, such as print and electric mass media. Although the nature and means of communication are constantly changing, human needs and basic motivations do not change. As we have mentioned, rhetoric is not about just speech or persuasion, but communication: it is much more than an analysis of text and public discourse or a set of strategies for negotiating symbolic action (Burke, 2004; Hart, 1997; Bitzer, 1968), it is also highly performative and quite simply, "something we do" (Haskins, 2005, p.4). Rhetoric is also about the achievement of human needs as identified by Maslow's Hierarchy of Needs, namely the needs of self actualization, esteem, love or belonging, safety, and physiology. Aristotle's

Rhetoric is a comprehensive attempt at understanding and communicating these needs, and an illustrative example is this description of happiness:

> 1. Both to an individual privately and to all people generally there is one goal {skopos} at which they aim in what they choose to do and in what they avoid. Summarily stated, this is happiness {eudaimonia} and its parts. 2. Let us, then, for the sake of giving an example {of what might be more fully explored}, grasp what happiness is, simply stated, and the sources of its parts … 3. Let happiness be {defined as} success {euprazia} combined with virtue or as self-sufficiency {autarkeai} in life or as the pleasantest life accompanied with security or as abundance of possession and live bodies, with the ability to define and use these things; for all people agree that happiness is pretty much one or more of these. (1360b 94-96)

A contemporary rhetorical theorist, Lloyd Bitzer, provides a metatheory of rhetorical action. In "The Rhetorical Situation," he identified three features of a rhetorical situation: exigence, audience and constraint. According to Bitzer, rhetoric is prompted by an exigency, which the rhetorical act is designed to change. It is in terms of the universal human needs and actions identified by Maslow, Aristotle, and Bitzer that we will consider and develop the notion of Universal Rhetoric, which we will introduce at the end of our paper.

The Biological Foundation of Rhetoric

Perhaps the reader is puzzled at this point in our narrative because of our inclusion of the biological ecosystem with the four other ecosystems of human communication under consideration in this paper and represented by media, design, the news, and religion. The theme that unites these five ecosystems is they each represent the propagation of organization. Here we are making use of an insight developed by Kauffman et al. (2007) in a paper entitled "The Propagation of Organization: An Enquiry," where it was shown that a biological organism represents the propagation of organization. This paper also demonstrated that Shannon's (1948) classical definition of information as the measure of the decrease of uncertainty in a finite number of possible messages was not valid for a biotic system. The core argument was that Shannon information "does not apply to the evolution of the biosphere" because Darwinian preadaptations cannot be predicted and as a consequence "the ensemble of possibilities and their entropy cannot be calculated" (Kauffman et al.). Therefore a definition of information as reducing uncertainty does not make sense since no matter how much one learns from the information in a biotic system, the uncertainty remains infinite because the number of possibilities of what can evolve is infinite.

There are many levels of communication within the biological ecosystem both among the various organs of which a living organism is composed as well as the communication between organisms occupying the same eco-niche. We therefore see a continuum of communication processes in the five ecosystems that we are analyzing in this paper. Another connection of the five ecosystems under consideration is that each involves mediation, where the level of mediation increases as we move from biology to media to design to the news to religion.

As media arises from and include the human biological need to communicate, media are more mediated than biology. All new inventions of media or technologies involve making use of pre-existing technologies and as a consequence they are more

mediated than the media of which they are composed. The news and religion ecosystems are symbolic ecosystems like media and design, but they address the Maslovian needs of esteem and self-actualization rather than those of safety and physiology. The news is mediated through the media of communication by which the news is disseminated as well as being filtered through the slant of the journalist, the work of the editor, and the bias of the publisher. For example, there are many levels of mediation in the news ecosystem, which have been historically documented and articulated by writers, theorists, and communication scholars. Building on capitalist journalism's structural problems, which Upton Sinclair had identified and labeled more than half a century before in his book *Brass Check*, MIT linguistics professor and social activist Noam Chomsky and retired Wharton Business School Professor Edward Herman clarified and extended the claims Sinclair made about how advertising and media ownership affect the democratic imperatives of a free press. In the late 1980s, they developed a theory, which they named the "propaganda model," that illustrates the inherent bias within the current system:

> Perhaps this is an obvious point, but the democratic postulate is that the media are independent and committed to discovering and reporting the truth, and that they do not merely reflect the world as powerful groups wish it to be perceived. Leaders of the media claim that their news choices rest on unbiased professional and objective criteria, and they have support for this contention in the intellectual community. If, however, the powerful are able to fix the premise of the discourse, to decide what the general populace is allowed to see, hear, and think about, and to 'manage' public opinion by regular propaganda campaigns, the standard view of how the system works is at serious odds with reality. (Chomsky and Herman, 1988, p. xi)

Whereas Sinclair built his argument in *The Brass Check* around one specific case—the suppression of news by the Associated Press and other outlets—Chomsky and Herman designed a model that explains how bias is built into the entire news-generation system. Their propaganda model explains how the government and corporations control public opinion through "news filters." Instead of objective interpretation of information and events on the basis of professional news value, "the raw material of news must pass through" these five filters on its way to be "cleansed" and made fit to print.

> The essential ingredients of our propaganda model, or set of news 'filters,' fall under the following headings: (1) the size, concentrated ownership, wealth, and profit orientation of the dominant mass-media firms; (2) advertising as the primary income source of the mass media; (3) the reliance of the media on information provided by government, business, and 'experts' funded and approved by these primary sources and agents of power; (4) 'flak' as a means of disciplining the media; and (5) 'anticommunism' as a national religion and control mechanism." (Chomsky and Herman, 1988)

This propaganda model is the primary focus of Chomsky and Herman's seminal work, *Manufacturing Consent: The Political Economy of the Mass Media.* Their model makes strikingly clear that the problems with the existing media system in America are "built into the system in such a fundamental way that alternative bases of news choices are hardly imaginable" (Chomsky and Herman, 1988, p. xi). They point out that, in addition to powerful economic imperatives, news reporters, editors,

and producers often unwittingly promulgate systemic problems because they adhere to and employ the conventions of the industry.

Much like the news ecosystem, the religion ecosystem is also mediated through the media and institutions of its dissemination as well as the dogmas, doctrines, and interpretations of the clergy and theologians. Both the news and religion involve storytelling or mythos, a term derived from ancient Greek, which simply means "to tell." Mythos is often referred to as the fourth mode of persuasion following ethos, logos, and pathos—Aristotle's primary modes. Both print and electronic journalists refer to their article or items as stories. Our conjoining of the news and religion under the umbrella of mythos or storytelling is supported by the way in which Christians refer to their gospels as the "good news." Robert Darnton, a former *New York Times* reporter, describes a whole series of news filters, which originate in the reporters head and mind. He claims reporters often write in "private code," and that powerful cultural determinants shape the practice of news writing. "Newspaper stories must fit cultural preconceptions of news," say Darton. "We had to work within the conventions of the craft" and adjust to the natural operations of the system (Darton, 1975, pp. 182-92).

A Biological Frame for the Rhetorical Canons

At first glance it seems that rhetoric and emergence are unconnected. There are, however, an interesting set of links between the five elements of the rhetorical canon, namely, arrangement, delivery, memory, style, and invention and the three elements of emergence or evolution, namely, descent, modification and selection. The overall goal of the rhetorician is persuasion and hence the link of the five canons of rhetoric with selection. The arrangement or rearrangement canon of rhetoric links to the modification element of evolution. Arrangement as in DNA, incorporates rearrangement as in re-mix and hence involves modification. Even if one has all the components that could make for an emergent phenomenon, they have to be arranged in a certain order for the innovation to emerge. And it is not much of a stretch to see delivery as a form of descent from the rhetors to their audience. One can also connect delivery with media or mediation. Delivery is basically the medium, but it also involves agency. The rhetor, especially in digital rhetoric, has many options and modes to deliver information.

DNA plays the role of memory in the biosphere. Media both old and new archive the memories of a culture. This is obviously true of the notated media like writing, print, recorded music, film, and even spoken language archives as has been suggested by Eric Havelock, who described the oral tradition as the tribal encyclopedia. The technosphere operates as a form of memory for the designer or inventor. As Basalla (2002) points out, no invention started from scratch. Each one was based on some previous invention. Archiving and drawing on archives is an essential part of news making. Of all the cultural institutions that exist, none preserve the traditions of the past with greater fidelity than religions. Social mores, languages, media, design, technologies, the dissemination of news, government institutions, and economic systems change with much greater frequency than religion. The stories of the great religions of the world are thousands of years old. Some forms of worship and organization have changed over the centuries, but the stories persist.

Memory is the descent element in evolution. Evolution can be described simply as descent, modification, and natural selection. In nature the modification is the result of mixing genes in sexual reproduction, or environmental causes, such as radiation or

chemicals. Descent is merely replication or reproduction. And natural selection is simply the result of the fittest modifications dominating the gene pool. In rhetorical studies there is much discussion about collective memory and the sites of memory. It is also an ancient technique of oral rhetors, who used physical architecture as mnemonic devices.

Style involves ornament and tells us how rhetors deliver their ideas. If delivery is about the medium, then style is about the message of the medium independent of its content, as expressed by McLuhan's "the medium is the message." The etymology of the word "ornament" is *ornare*, which means to equip, fit out, or supply. Thus style is not just ornamentation in the sense of decoration, but an essential part of establishing the rhetor's argument. In *The Rhetoric*, style is termed "lexis" (Latin *elocutio*), which refers to "ways of saying something" and is very different from what is said, or logos. It can be seen broadly as how a thought or idea is expressed in words or a total work or, in a more restricted sense, as word choice or diction.

According to Artistotle, style meant saying something in the right way. However, he offers conflicting opinions about practicing this canon. Style is word choice that is clear and appropriate—a natural style suited to the customs and "not in excess." He also recommended the use of metaphor as a way for rhetors to use imagery to make their words more meaningful and real to an audience. Rhetorical theorists have studied style closely (Lanham, 1992, Gibson, 1993) because it most closely reflects the rhetors voice, which is a powerful tool.

The objective of design is innovation and hence the design ecosystem incorporates invention as a central theme, but this does not exclude the other canons of rhetoric, namely, delivery (distribution), style (user satisfaction), memory (use of elements from the technosphere of previous inventions), and arrangement (the remixing of the elements of the technosphere with the new elements created by invention). The analog of invention in the news ecosystem is putting a slant on a story as well as deciding that certain events are worthy as news. Blogs, wikis, and all the cutting edge participatory genre of digital media are changing the way news is disseminated. Invention tells us about the "what" of an ecosystem. Invention in the religion ecosystem is the creation of new myths that move people spiritually and ethically and promote altruism.

Emergence Theory and Ecosystems

Another tool that we will make use of in our analysis is emergence theory. We will use the term emergence in the following technical way: an emergent phenomenon is one consisting of a complexity of components where the properties of the emergent phenomenon cannot be derived from, predicted from, or reduced to the properties of the components out of which it emerged. The properties or behaviors of living organisms cannot be derived from, predicted from, or reduced to the properties of organic chemicals of which they are composed. For example, biology cannot be reduced to physics or chemistry. Language and other forms of mediated communications are emergent phenomena whose properties cannot be derived from, predicted from, or reduced to human biology. The design of new technological tools is also emergent; they cannot be derived from, predicted from, or reduced to human biology or earlier elements of the technosphere.

And finally the news, which is based on events in human affairs or natural events that effect human affairs is also an emergent phenomenon—a product of events being described and the bias or slant of the creator of the news story. The notion that a news

report can be objective is a myth because the experience and vested interests of every news reporter are unique. Jacques Lusseyran, blinded when he was a youth, criticized the "myth of objectivity" in moving terms based on his experiences:

> When I came upon the myth of objectivity in certain modern thinkers, it made me angry. So there was only one world for these people, the same for everyone. From my own experience I knew very well that it was enough to take from a man a memory here, an association there, to deprive him of hearing or sight, for the world to undergo immediate transformation, and for another world, entirely different but entirely coherent, to be born. Another world? Not really. The same world rather, but seen from another angle, and counted in entirely new measures. When this happened, all the hierarchies they called objective were turned upside down, scattered to the four winds, not even theories but like whims. (Lusseyran, 1963, p. 112)

It follows that the news like biological organisms, media, and design cannot be predicted from or reduced to the actual events being reported and the unique perspective of the reporter.

The Emergence of Digital Media and a Universal Rhetoric

The principle aim of rhetoric is communication, communication that persuades. The nature of rhetoric has changed over the millennia as the principal media of communication and persuasion have changed. The rhetoric of oral communication and that of written communication are naturally going to differ as the two media of oral and written communication differ from each other in so many ways. The nature of written rhetoric changed with the arrival of the printing press. As pointed out by Innis and McLuhan, the electric media of mass communication brought with it an altogether new kind of mass media rhetoric. And finally with today's digital "new media" many scholars have identified a new rhetoric that they term digital rhetoric (Laura Gurak, 2001; Mary Hocks, 2003; Richard Lanham, 1993; Losh, 2007; Warnick, 2002; Welch, 1990; Zappen, 2005). According to Losh (2007), "Digital rhetoric is characterized by many new genres: e-mail, electronic slides, webpages, blogs, wikis, video games, etc." A number of universities offer courses in digital rhetoric like the McMaster University course offered by the English department entitled: "Digital Rhetoric and Communication."

Although the media through which rhetoric has been communicated has gone through many changes, we are claiming here that there exists a universal core to rhetoric, whether it is oral, written, electric, visual, or digital. The reason for this universal core of rhetoric, or persuasive communication, is that although the media of communication have changed human needs and human motives, as described by Maslow, the human psyche, McLuhan aside, has not changed. The style—the "how" of persuasion—and the voice of twenty-first century rhetors have changed as the dominant media of human society have changed, but the basic logic and mode of persuasion is the same today as it was in the day of the classical rhetoricians, Plato and Aristotle, and of the pre-literate rhetoricians, the singers of tales.

We may think of Universal Rhetoric in a manner similar to Chomsky's (1957, 1965, 1995, 2000) notion of Universal Grammar (UG) or Brown's (1991) idea of human universals and Logan's (2006, 2007) notion of Universal Culture. We argue here that a rhetorical analysis can contribute to a better understanding of the ontology of communication and those elements that remain universal. Chomsky explains his notion of

the UG as a result of the human psyche having been magically hard wired with a Language Acquisition Device that contains the UG. An alternative explanation offered by Christiansen (1994, 1995, 2003) is that language operates as an organism with its own evolutionary dynamics, an idea that dates back to Darwin (1871). Christiansen and Ellefson (2002) describe language as "a kind of beneficial parasite… that confers some selective advantage onto its human hosts without whom it cannot survive." Language evolved as an organism that could be easily learned by the human infant, which explains why the languages of the world possess a UG. The human psyche that shaped the grammar of human languages is universal and hence the grammar of those languages is universal.

Logan (2007) applied the same argument to culture, which, like language, is essentially symbolic—a set of ideas, beliefs, and knowledge, whose acquisition by the human mind, like that of language, must be simple and straightforward if it is to be transmitted and hence survive. It therefore follows that culture is also an organism, an obligate symbiont. If we accept this hypothesis, then it follows by analogy that the conclusions Christiansen reached regarding language would apply to culture as well and that we could expect human culture to have a number of universal structures or features. In fact, Donald E. Brown (1991) in his book *Human Universals* cites over 100 universal features of human culture. Similar arguments for the universality of human culture are also made by Johnson and Earle (1987) and Cronk (1999).

Extending the arguments of Christiansen (1994) with language and Logan (2007) with culture to rhetoric, we claim that independent of the medium and independent of the ecosystem in which it operates that rhetoric is universal. This argument follows naturally for the ecologies of media, design, the news, and religion that we have identified above because each is a product of human culture. Applying it to the biological ecosystem will be a bit of a stretch, which we justify on the basis that all of the ecosystems we consider in this article have a biological underpinning, as human beings are biological creatures and the various elements of their culture are also a product of descent, modification, and selection.

One of the consequences of digital rhetoric is that digital culture splinters into a thousand different sub-cultures because of the long-tail phenomenon. One of the goals of rhetoric was to persuade all the citizens of a society to adopt a common view of what constitutes good government. Aristotle and Plato, and the medieval rhetoricians for that matter, had the view that there was one absolute truth that could be arrived at through rationale arguments. The postmodern view, which we believe is a consequence of the digital communication age we live in, no longer holds that there are absolute truths or norms that everyone should or needs to adhere to.

This does not mean that the art of persuasion is no longer of value—quite to the contrary. Digital rhetoric serves the purpose of finding like-minded thinkers to commune with. As a result, digital rhetoric becomes quantum rhetoric, where one can hold two opposite points of view simultaneously. There is no longer a correct position and an incorrect position, which is at the logical antipode of the correct position. The quantum rhetorician sees both sides of the argument simultaneously. Rather than establishing that one position is correct and useful and the other is wrong and not useful, the quantum rhetorician sees the value of both positions, not in an either-or stance but in a both-and inclusive stance.

McLuhan hinted at this when he declared that all technologies, all media, have both service and disservice. For example, in the Talmudic tradition seatmates take opposite positions one day and then the next day they switch positions and argue their new position with the same passion and ardor as they did the day before with the opposite position. The Greeks, who fully embraced the classical rhetoric of a right and a wrong position, were convinced by Parmenides that non-being could not be. As a result (Logan 2004) they were unable to invent zero, a feat achieved instead by the Hindu and Buddhist mathematicians, who were often criticized by Western historians of mathematics for not always being logically rigorous. For the Hindu and the Buddhist, non-being not only existed, it was the path of salvation to Nirvana. They were also early quantum rhetoricians! Zero was also invented by the Mayans, but how they did this has been lost because so many of writings of the New World culture were destroyed by the Spaniards as they searched for the truth operating within the classical rhetorical mode.

Conclusions and Directions for Future Research

Connecting biology, communications, the creation of technology by design, and rhetoric elevates our understanding of human cooperation, altruism, Ciceronian "good government," and wisdom traditions and also provides insight into that which is divine. For Cicero and later Quintilian, "good government" depended on the character of individual citizens. Character was a critical part of virtue, which prompted good deeds for the state, hence good government. We also hope to create an historical context in which we connect the communication thinking of ancient Greece and Medieval rhetoricians with modern day thoughts about digital media and cybernetics.

The rhetorical canon and emergence theory provide a useful framework for explaining how cultural systems and institutions, such as journalism and religion, function and evolve. This analysis is a beginning to further employ this methodology and explore qualities of universal and quantum rhetoric to better understand how media evolve and function.

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