From biorhetorics to zoorhetorics

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Abstract. The present article aims to introduce the field of "Zoorhetorics", as a particular case of Biorhetorics, earlier introduced by the author in the academic world. A brief explanation will be provided of its aims, methods and models, while particular attention will be devoted to the concept of "sustainable good", considered crucial in both the "Bio-" and "Zoorhetorics" formulations.

1. Introduction

Biorhetorics is an applied branch of classical rhetoric founded by the author in the 1990s (see, for instance, Pain 2002). It develops from animal representation a natural argumentation system that can be applied in conflict resolution in human-animal encounters and in conservation issues. There is a simple horizontal equation based on rhetorical equivalency. It postulates that the force of a successful argument is equal to the distance from the position of the audience at X to the required position Y. The tropes and figures, as well as the central components of the argument can be measured as factors of the force. The goal is a sustainable good.

Biorhetorics, in its original formulation, was aimed to be applied in the biological sciences, while here, under the ambit of zoosemiotics, it seems more appropriate to limit it to animals and therefore one may think to the neologism "zoorhetorics".

Rhetoric, like all forms of reasoning, approaches or methods, emanates from language and logic. This would immediately exclude

most of the subjects of the animal kingdom, where few are capable of symbol manipulation that is not in a fixed referential system, that is, this symbol equals that and nothing else. Classical rhetoric includes so many examples of arbitrariness that it seems almost embarrassing to suggest that animals use rhetoric to achieve ends. They do not. What zoosemiotics aims to do is present a working framework that can be useful firstly in working with animals, and also living with them.

Let us begin with some straightforward examples. Say a starfish that is eating coral on the barrier reef. Scientists working with measures to prevent the spread of this devastation will study and observe the ecology, the individual actors, and then hypothesise about a solution, test this in the laboratory and finally in the field. But how does one go about "persuading" a starfish not to eat coral? We must first consider how the starfish is directed to its prey. Something about how the "coral" is represented to the starfish, and then begin to elaborate a biological argument. At this stage, we can input a sustainable good. This sustainable good is the idealised state of the coral for balance in the marine ecology. What growth is sufficient for the area? Once we know these parameters, then the goal would be to reduce consumption of the coral to an acceptable level. This is extremely difficult because the coral is a staple part of the starfish's diet. Below is a working model of zoorhetorics (Fig. 1):
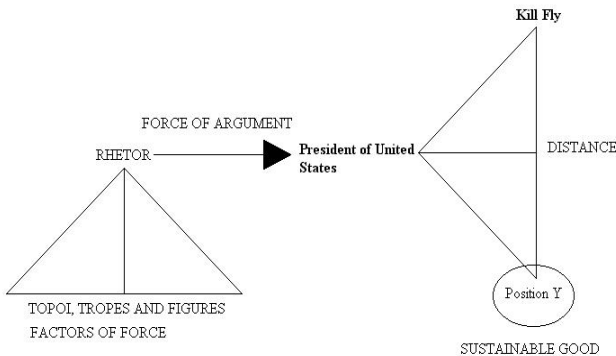

Figure 1. Working model of zoorhetorics.

We can now begin to brainstorm and go over possible solutions. Each of the components used by the scientist/rhetor will be measured as a factor of the force of the argument, which is necessary to "move" the starfish audience to the target position. Let's say that we establish a quota of coral as a sustainable good, then our objective would be to find a biological argument to achieve that. We must know our audience well and their representation systems. An ethogram needs to be constructed so as to map out how the starfish navigates, locates and feeds (Fig. 2). This will supply the data for constructing topoi etc.
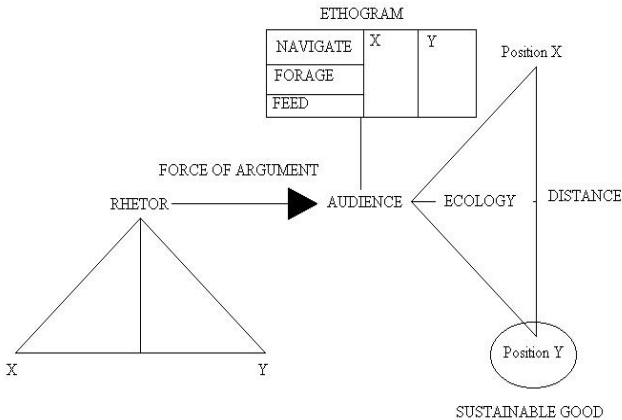

Figure 2. Ethogram mapping the necessary data.

Once we have the raw data we can test the development of an argument. For example, a simile of the navigation route. Here the starfish is directed to an area — say the quota region of the coral colony where least damage might be done and which entails a sustainable good. With little cost, a buoy or a submersible could leak out clouds of attractants to direct the starfish. Zoorhetorics and biorhetorics are *not* implying that animals *actually* have the ability to argue or persuade, but they do in their interactions have evolved behavioural and communication strategies. These have been analysed by zoologists

using quantitative models predicated on cost and benefit. These metric approaches are of course more elegant, here the proposal is to get the researcher in the laboratory and the field to use her insight to elaborate novel solutions using informal reasoning — and inputting a sustainable good. It would seem to counter scientific practice to input a teleology of a good, however in scientific protocol, practice and policy, the three "ps" of science, there are objectives that include taking into account the welfare of an animal or environmental concerns. The zoorhetorics model has those three "ps" in mind.

2. Nature of sustainable good

We might at this juncture consider the models used in animal communication and behaviour studies, indeed the various mathematical models behind evolutionary theory. These often discuss the function or form in terms of costs and benefits to the animal. When one uses the same terms and language in economics, we are fully aware of the nature of a good, because microeconomics and macroeconomics are in the *service* of economic philosophies, which have prescribed teleologies. Disputes about the value and goal of traits or adaptation in evolution arise due to the fact that the mathematical models derived from economics are not truly independent of ethics and metaphysics. They are situated within the context of diminishing resources — factors of the scarcity of natural resources.

An animal's life is within this economy. Since we see ourselves as custodians of the planet — an example of what Peter Singer would claim to be speciesism, we evaluate things according to our conception of what is valuable to us. In short what is an anthropocentric good. Of course animals and plants are at liberty. That is the pretence. They are not. We are at this stage where we have more or less total domination of the planet. Yet, as a species, we do not share consensus about the nature of the good. Billions of people believe that the good is a

metaphysical one rather than a material good. For them, science and its goals are subject to Gods and beliefs. On the other hand, empiricists believe that Science is the servant of a material good. However, this is still an anthropocentric good. The goal of obtaining a truth is contextualised within the frame of a material good. We measure a scientific truth by how good it is according to its anthropocentric value.

Let us now look at a typical communication dyad say between two fish. We can assess the "signal" between the sender and receiver in terms of the costs in evolutionary and development terms. We assess this by looking at the population and working out over a period of time whether this form of communication has helped or hindered the growth. We can also look at the energetics. Literally a calorific approach, for example, how much energy does it require to grunt or display? The benefit is ultimately reproductive, that is, how much does this grunt or display assist in the furthering of the species. The benchmark is sex. Yet, one level higher, the ecologists will study the communication in terms of how the act impacts upon the ecological process, a process that has economic checks and balances, situated within an anthropocentric material (sustainable good) — that is, the balance of Gaia (a metaphysical good?)(Fig. 3).
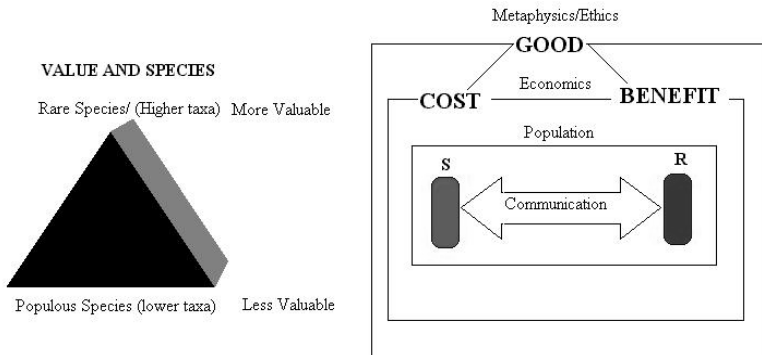

Figure 3. i. Value and Species; ii. Communication and Ethics

Throughout zoology the economic criteria are determining the focus and direction of research. For example, in the laboratory, the scientist will view the "sacrifice" of a fruit fly as being unimportant. This is not only because of the threshold of pain or suffering is much higher in invertebrates, but also because of their availability. The more there is of an animal or life form, the less valuable it is. A Siberian tiger is more valuable than a lion. However, the life of a Siberian tiger would be more valuable than say a rarer spider, because of the anthropocentric measure of life. If we quantify the two value axes, in a hypothetical case we might get (Fig.4):
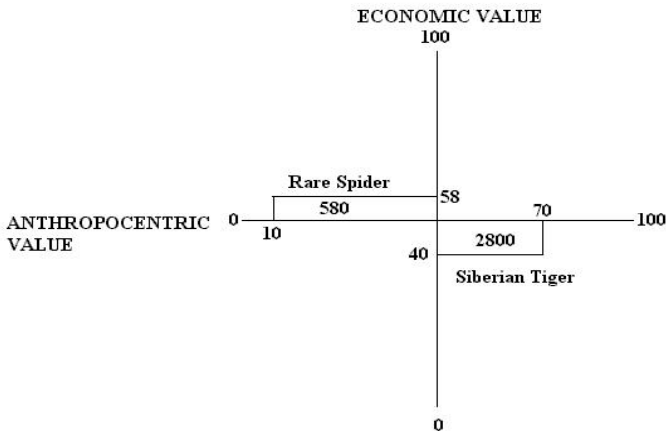

Figure 4. Economic criteria determining the value of life forms.

A sustainable good is a compromise between the anthropocentric value and the normative economical one that is calculated according to the laws of environmental diminishing resources. Consider an evolutionary question about design. Can we talk of good design in relation to traits? Richard Dawkins would argue no, as this smacks of Aristotelian biology. But communication is measured in terms of a utilitarian good, that is, effectiveness. We can certainly say that when

discussing reception — one radio station is better than another is. We would routinely talk of effectiveness and efficiency in physics. Those are qualitative judgements based upon our perception. By the same analogy, we can talk of the costs to the environment and say that one radio station involves more energy than another does. So, the outcome maybe that we chose one over the other because of costs and perception. Animal communication researchers evaluate animals like these radio stations, however they do not assess the sustainable good in the act of communication, nor directly in their research. They leave those questions to others. It is assumed others will take care of this. The aim of the scientist is to fulfil a discrete task. In this the scientist is right. One cannot use rhetoric to measure communication. Rhetoric cannot build tape-recorders or spectrometers. However it can bridge the quantitative and qualitative through employment of informal logic.

Going back to the communication dyad of the fish. The end of zoological science is to provide a faithful and testable/repeatable account of the communication as grounded within evolutionary theory. We wish to achieve results that can be falsified, and ones that can provide us with data for generalisation and prediction. The more generalised the data, the greater the yield in prediction. Predictability is a value and a perceived good in itself. It colours how we view the animals. If they show greater idiosyncratic or exceptional behaviour, they might scupper the results. This demand for generalised predictability is not necessarily an economic good. It is an anthropocentric good. Indeed, in most cases research is uneconomic and unsustainable. Logic knows of no sustainable good. Rhetoric on the other hand was expressly formulated to bear in mind a good.

3. The President of the United States and a housefly

The President of the United States does not constitute a pest, unless you happen to be the president or citizen of a country opposed to American goals. A housefly however does constitute a pest. While today we associate the housefly mainly with something "troublesome or noxious" (the latter being harmful or unwholesome) in the Eighteenth century, the pest was directly connected with the plague. In Sheridan's dictionary for example a pest was defined as:

> *Pest,* s. plague, pestilence
> and had several connotations, derived from pest was
> *Pester* v. a. (to disturb),
> *Pesthouse* s. plague hospital
> *Pestilence*, s. plague
> *Pestilential*, a. infectious

Of course we are conversant with this connection and view the presence of many flies as unhygienic and a sign of disease or decomposition. A popular crime author Simon Beckett begins his novel with a chilling and clinical view of decomposition — maggots are given star billing because they are stomach churning to many readers. With this in mind, President Barack Obama's killing of a fly should win our approval. A fly is bad news for health. Again, using the measurement of an anthropocentric good, it scores low. It is populous. It is a low invertebrate with a very high suffering threshold. It is a pest in a full meaning of the word! Yet, what of its economic value? Despite its bad press, the fly is very useful in natural economics. It helps to breakdown sewerage, rotten meat, food, and its maggots are useful in treatment in hospitals. But one pesky fly? Labelled by the President, "a little bugger". How do we deal with the conflict between pest and the target. Notice in this case it is retrospective. We now know the impact of the story.

The manner in which the President killed the fly and then kicked it to one side and the manner in which the television camera recorded the event is steeped in politics (Fig. 5).
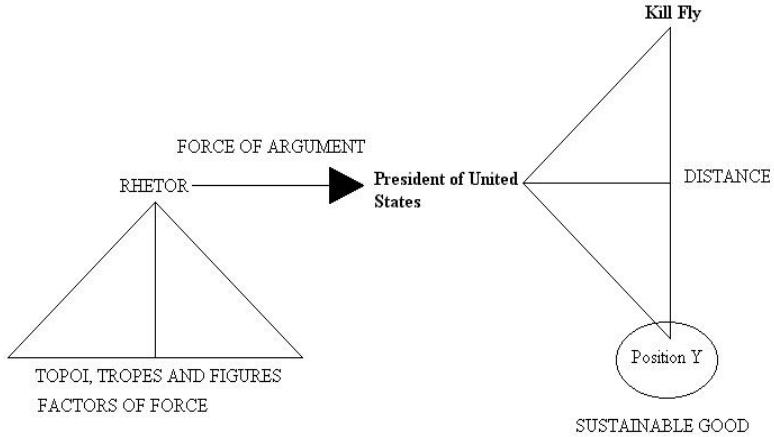

Figure 5. The Fly and the President

An animal rights group complained immediately. They felt the President could have spared the fly's life. That is of course an interesting perspective. Jainists would concur. Yet, despite the seeming callousness of the President's slap and kicking aside of a living animal/creature — the majority of us slaughter invertebrates every year by the billion.

What argument could be developed based on a sustainable good to change the mind of the President? One might argue the fly is one of God's creatures and is entitled to life, however this is not based on an economic good, even if it is ethical. One might argue that it led to unfavourable reviews and affected the Presidency. This could be persuasive. But given the fact the fly continued to affect the President's performance, it could be outweighed by the value and significance of his statements. There is indeed very little to be said in favour of the continuance of the fly's life, unless we invoke ethics/religion and

sentimentality. One fly's demise makes little difference given the billions upon billions of flies on the planet. A reasonable person would have acted in the same way. A president of course represents a nation and his or her acts are read differently. Obama might have been seen as a "softie" who it might be said of, "wouldn't kill a fly", now he has proven that impression wrong. Suppose the fly was a: butterfly, crab, octopus, lobster. Would we react differently, aside from how difficult it is to kill some of these animals with one deadly blow. We would. Because in the first case we consider the butterfly, though not having necessarily a higher EQ than a fly, and maybe even having a higher threshold of suffering, as more aesthetic pleasing. The crab we recognise as suffering more than a fly. There are laws protecting the lobster and octopus as they have more developed nervous systems and therefore they suffer more (Pain 2008).

Therefore, despite the fact these invertebrates may or may not be more advanced neurobiologically, we would be more alarmed at their death than a housefly. Similarly if the President were to kill a protist — few if any would blink an eyelid. Yet, do not all these animals have a right to life? Apparently we do not think so. We evaluate animals according to the anthropocentric measure (an extrinsic value) — and sometimes take into account their economic value — the natural intrinsic value. By the way, the President is not a vegetarian and probably on average eats the flesh or parts of animals three times or more a day, indeed if we add up the tally, that would be over 1000 animals a year at least. The vast majority would be birds and mammals — in other words animals with a lower threshold of pain, social, and with relatively high EQ. The manner they are killed is judged humane. However there are those who contend the methods are not so humane, and prior to their slaughter these animals experience terrible living conditions and stress. The fly on the other hand was dispatched immediately, in such a manner that it would have not even really felt what happened. It does not justify the act, but puts it into a social context. Another point is that Americans unlike Africans do not con-

front so many flies. In the hot climates, flies are swatted continuously, to fail to do so, would jeopardise one's life.

It is either the fly or one's health.

References

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От биориторики до зоориторики

Цель данной статьи — ввести понятие «зоориторики», которое является особым случаем уже распространенного в академическом мире автором понятия «биориторики». Кратко объясняются цели, методы и модели зоориторики, при этом особое внимание обращается на являющееся фундаментальным как в зоо- так и биориторических определениях понятие «непрерывно восполняемое благо».

Bioretoorikast zooretoorikani

Käesolea artikkel tutvustab "zooretoorika" mõistet, mis on varem sama autori poolt akadeemilises maailmas juba levitatud mõiste "bioretoorika" üks erijuht. Artiklis selgitatakse lühidalt zooretoorika eesmärke, meetodeid ja mudeleid, kusjuurest erilist tähelepanu pööratakse "jätkusuutliku hüve" mõistele, mis on fundamentaalne nii zoo- kui bioretoorilistes määratlustes.