AIPGG Journal of Humanities and Peace Studies Vol. 3. NO 2.2022
ISSN: 2756-5831 (ONLINE)

Humanity learning from science: A plant metabolite inference on Africa's social conditions.

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Abstract

This paper seeks to examine plant metabolic process and underscore lessons that could be inferred from plant metabolic processes with regards to African's social condition problematic. This is to make for a better understanding of the deep lessons imbedded in the interaction between the unknown being (plants) and known being (man). This proposed research explores profound views and change in our view of us and plants as living organism. The paper seems to build theory around the concept of Plant Molecular Ecology. Thus, the research will adopt a scientific, descriptive and analytical design. The research will place huge reliance on the following primary materials: participant observation with plant molecular ecologists, oral interviews and comments of scientists. The secondary materials that will be used are amongst others: textbooks, journal articles, conference papers, the internet and other works of scientific literature. Thus, the paper offers a new way of thinking about the relationship between humans and plants that open up avenues of inquiry and insight that are currently unnecessarily closed off.

Keywords: Plant Metabolite, Science, Social Conditions

Introduction

The dominant approaches to the study of Africa's social condition posits varying spectrum of problems and suggested solutions. Such problems and suggested solutions such as conflict, corruption, leadership failure, kidnapping, Banditry, insecurity and poverty are well captured. Hoselitz[1]in an insightful contribution to knowledge identified the fact that such independent variables as culture, colonialism, imperialism, international system structure, ideology and other reasonable explanations and theories reinforced the problem of under development as dependent variable with regards to Africa. It is in this direction that this paper's attention on human/plant issues is sourced within growing studies in the humanities and social sciences into the interrelations between human and nonhuman species. Following by inference on trans-species perspectives considerations, this paper aims at unraveling how these perspective would contribute to our understanding of socio-cultural, socio-economic and socio-political realities in African Studies, where the non-human

[1]Hoselitz .B. (1960), Sociological Factors in Economic Development. Glencoe: The Free Press

animal is an unavoidable presence, physically, metaphorically, ideologically, spiritually and even in its silence and invisibility.

As a Plants/Human trans-species perspective inquiry, this research will help us to transform how we deal with plants in all aspects of living from a model of exclusivity to one of inclusion. A shift to a trans-species perspective would unarguably provide deep scientific inference and explanations to African social conditions with possible lessons and solutions. Thus, the proposed research offers a new way of thinking about the relationship between humans and plants that opens up avenues of inquiry and insight that are currently unnecessarily closed off by a unidirectional paradigm. The foregoing is more pertinent as its nexus with humanity is deeply rooted in the quest by nations of Africa and beyond to domesticate approaches that will be a panacea to the lethal effects conflicts fueled by lack of accommodation and other stress conditions in African societies. It is unarguable that insecurity challenges experienced by Nigeria and Africa at large have chiefly led to colossal loss of lives and properties. This grave aforementioned by-product of insecurity and its attendant effect on nations' development therefore, makes it imperative to foster a new security strategy.

Further to the above, is the obvious fact that potent threats adjudged as potential sources of disaffection, discontent and instability that could adversely affect the quest for security, unity and development unarguably includes but not limited to global challenges; terrorism; transnational organized crimes; crude oil theft or illegal bunkering; climate change; communal and ethno-religious conflicts; pastoralists and farmers conflicts; politics and federalism as is in Nigeria; governance; poverty; kidnaping, proliferations of small arms and light weapons; proliferation of weapons of mass destruction; illegal migration; economic challenges; financial crimes; information technology and cyber security etc. The above listed are most potent and have continued to threaten the very fabric of nation's efforts at national integration, creating the ecology of fear, disquiet and anxiety; it has also meted a deadly blow to development trajectory. It is then, the aim of this proposed research to rethink lessons, humanity can learn from plants considering the seeming daily occurrences of unexpected developments and many uncertainties that prevail in every region of the world as does to cast doubt on the viability of a long established ways in which international affairs at large have been conducted and global security maintained.

The concept of Trans- Specie

According to Lori[2]:
The general term trans-species perspective derives from and encompasses Trans-Species Psychology, a new paradigm of science, knowledge, and culture established by psychologist/ecologist Gay Bradshaw, As gleaned from an

[2]Lori, Marino. *A Trans-Species Perspective on Nature.* http://nob.emory.edu/faculty/personal, n.d.

interview by World Press, she asserts that Trans-species psychology describes a common model of brain, mind, and behavior for all animals, human inclusive. It draws from research in three main fields: neuroscience, ethology, and psychology. However, in defining the Why "trans" and why of "psychology", she[3] maintained thus:

> Trans re-embeds humans within the larger matrix of the animal kingdom by erasing the "and' between humans and animals that has been used to demarcate and reinforce the false notion that humans are substantively different cognitively and emotionally from other species. For instance, we have chosen to create guns and weapons of mass destruction that kill millions of people and other animals. Other animals don't do that. The significant difference therefore derives more in what we chose to value and do than what we are capable of doing. Other animals certainly have the brain-capacity and many the physical means to kill indiscriminately, but they usually don't. When there is what we might call a non-utilitarian killing —that is, not for food or to defend—then it happens under unusual conditions, conditions far different from those to which they have evolved and adapted (Animal Visions, September 17, 2010)

Therefore, in contemplating a trans-species perspective in this direction, it is considered herein as an all-encompassing stance towards nature that embraces the continuity and comparability of all species' lives, plants inclusive. It shapes the way we view ourselves in relation to other animals or species and involves changing our current model of those relationships from one of separation and condescension to one of communalism and respect. The trans-species perspective provides us a way to move forward in a more authentic, productive, and ethical manner with respect to ourselves and the other animals with which we share the planet. Given the mass extinctions, global destruction of habitat, environmental degradation, and continued mass exploitation of other animals and plants inclusive, nothing short of a shift in human psychological perspective is needed to turn things around.

In the light of the foregoing, it is pertinent to observe that Western literatures with regards to the trans-species have conventionally beamed searchlight on the problematic relationships between human and nonhuman and posits that the power relations is largely defined by a power differential. Scully[4], one of the leading scholars of this proposition, in the light of the foregoing argued that, this

3Bradshaw, Gay . Animal Visions, September 17, 2010)https://animalvisions.wordpress.com. September 17, 2010.

4Scully, Matthew. Dominion: The power of man, the suffering of Animals and the call to mercy. St. Martins, Griffin, 2003.

ISSN: 2756-5831 (ONLINE)

differential has denied non-human animal's agency and a psychological life. Perhaps, Scully's proposition justifies the orientation that Power is much attributed to man as a human. Thus, in a dramatic but captivating way, he made some valid points as he referred to some people having the opinion such as "humans having conscience to such extent that they are obviously are better than animals and that giving them dominion over them so human can eat them because they are stupid and they have no idea what's going on. He proceeded to argue that:

> "What people say that they like their veal or hot dogs just too much to ever give them up and yeah it's sad about the farms but that's just the way it is, reason hears in that the voice of gluttony. What makes a human being human is precisely that ability to understand that the suffering of an animal is more important than the taste of a treat" (303).

The implication of the above postulation is suggestive that instead of arguing for animal rights, Sully argued that humans have neglected to exercise care for animals in their use of them. Much to it, forsook, a biblical and moral vision of dominion for a quite selfish and callous use of animals for profit. In essence, human ends up been disfigured and reduced.

The above approach to the trans-species consideration been largely reckoned with in recent studies. Psychology and emotions are no longer viewed as exclusive property of humans. This is hugely unchallenged, as there are documented studies as applies to accumulation of personal testimony, scientific literature, and emergence of diverse animal rights groups. To this end, Cavelieri and Singer[5] offered a compelling and revolutionary insight that calls for the immediate extension of human rights to great Apes and proclaimed the extension of the community of equals of human beings to include Chimpanzees, Gorillas and Orangutans. In another direction, De Waal[6] challenged basic assumptions about who humans are and how they differ from other animals. In a fascinating analysis offered a good understanding and underscored the possibility that Apes have their own culture and that it is erroneous to think that only humans are culturally free and sophisticated. Bekoff[7], in a seeming collaborative stance in his 2002 study, also presented the emotional and mental world of animals to serve as background for man's thoughtfulness about humility and animal protection as well as wellbeing, wherein he urges a new paradigm of respect, grace, compassion and love for animals.

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[5]Cavalieri, P & Singer, P. *The great ape project: Equality beyond humanity.* New York: St. Martins Press, 1993.

[6]DeWaal, F. *The ape and the sushi master: Cultural reflections of a primatologist.* Basic Books: Boulder, CO., 2001.

[7]Bekoff, M. *Minding animals: Awareness, emotions and heart. .* Oxford: Oxford University, 2002.

Perhaps, the attempt to justify the trans-species considerations is situated within the wider context of recent epistemological re-orientation and attitude change disposition of some scholars as related to the development of an environmental ethic that sees nonhuman nature as something more than a commodity. Spectacularly, Goodall & Bekoff[8] in this direction, shared their hope and vision for humanity and on earth's creatures and eloquently concentrated on ten trusts to reveal how humanity can gain true enlightenment by living in harmony with the animal kingdom and honouring the interconnection between all species. Also, Singer, in an apparent supportive stance to the foregoing remarked thus:

> "I urged that despite obvious differences between humans and nonhuman animals, we share with them a capacity to suffer, and this means that they, like us, have interests. If we ignore or discount their interests, simply on the grounds that they are not members of our species, the logic of our position is similar to that of the most blatant racists or sexists who think that those who belong to their race or sex have superior moral status, simply in virtue of their race or sex, and irrespective of other characteristics or qualities. Although most humans may be superior in reasoning or in other intellectual capacities to nonhuman animals that is not enough to justify the line we draw between humans and animals. Some humans—infants and those with severe intellectual disabilities—have intellectual capacities inferior to some animals, but we would, rightly, be shocked by anyone who proposed that we inflict slow, painful deaths on these intellectually inferior humans in order to test the safety of household products. Nor, of course, would we tolerate confining them in small cages and then slaughtering them in order to eat them. The fact that we are prepared to do these things to nonhuman animals is therefore a sign of "speciesism"—a prejudice that survives because it is convenient for the dominant group—in this case not whites or males, but all humans".

A look at microorganisms, plants, animals and isolated DNA samples with regards to the Behaviour of Life Living things reactions in various environmental conditions reveals that behaviour is fundamental to living organisms. Berg[9] in this direction posits that Bacteria actively move in response to chemical gradients, amoebas change body shape to wrap around food, and daffodils reorient flowers to face downwind in moderate winds. Animal

[8]Goodall, J., & M. Bekoff. *The ten trusts: What we must do to care for the animals.* San Francisco: Harper Collins, 2002.

[9]Berg, H. C. *Motile behaviour of Bacteria.* 24-29, 53: Physcis Today, 2000.

behavior is influenced by genetic mechanisms. Recent work on the genetics of behavior in ants (Pheidolepallidula) evaluated how some workers in a colony shift from large, aggressive nest defenders to non-aggressive foragers. Scientific researchers have proven that Animal behaviour is also influenced by physiological mechanisms. Chemicals known as corticosteroids often become elevated in individuals during stressful conditions. Under these circumstances reproductive and territorial behaviors are suppressed and escape behaviors are promoted instead[10]. In order to withstand adverse conditions of the environment and utilize to their maximum benefit the nutrients and other conditions prevailing therein, the organisms develop certain morphological, anatomical, physiological and reproductive features. Any feature of an organism or its part which enables it to exist under conditions of its habitat is called adaptation. Every organism develops certain adaptations and so does the population or a community. The completion of life cycle of an organism or stabilization of a community results through a series of adaptations which have survival value.

Predicated on the observations above, it is follows to state that it is against this background, that this paper explores plant metabolic process and underscore lessons that could be inferred from plant metabolic processes with regards to African's social condition problematic.

African's social condition problematic: In the shadow of Hobbesian political thought

Africa is unarguably the least developed and most insecure region of the world. David D. Mayen in this direction argued that this ranking is not because of lack of resources but because":

> "The sub-continent has been plagued by ethnic civil wars and economic mismanagement. State failure in the region has been explained in various ways such as aid dependency, endemic corruption, tribalism, and electoral malpractices in the context of persistent conflict. The essence of state failure relates to an inherent incompatibility between the sociopolitical structures and the government regimes that have continued to rule sub-Saharan Africa. Lack of adherence by sub-Saharan African governments to any forms of social contract is where the region's fundamental ailment lies."

Thus, it is within David's thoughts on Africa that Thomas Hobbes political theory is contemplated and situated in this paper. To underscore the importance of a strong central authority in the management of our communal life, Thomas Hobbes, an ancient philosopher, prescribes as baseline a "state of

[10]Wingfield, J. C. et al. *Ecological bases of hormone-behavior interactions: the "emergency life history stage.* " American Zoologist, 38, 191–206 , 1998.

nature"[11] which is a rudderless state where everyone acts in the way they like; where there is no independent authority to arbitrate or intervene in disputes, as everyone is a judge, jury and executioner in their own cause; where social institutions, like family, Universities, business and other relationships, including love affairs and contracts, are not protected and thus do not exist. In that jungle, everyone lives in "continual fear, and danger of violent death. And the life of man becomes solitary, poor, nasty, brutish, and short." With no common good, personal appetite is supreme. This meant that man had the „right to all things", including the freedom to do as he pleased and to harm all those who threaten his self-preservation.[12] Anyone in the „state of nature" could do as he pleased to anyone else, and the people had every right to defend themselves, by whatever means necessary in the absence of order. This, Hobbes believed, would eventually lead to what he termed „a war of every man against every man", and thus make life „solitary, poor, nasty, brutish and short".[13] In this state of war men lived without any common power and every man was an enemy to every man.

Apparently, this abstract state of continuous conflict should make one think of how our life could be at a busy intersection with no one to direct traffic. The boundless right of the individual naturally invites preemptive strikes to repel anticipated aggression. The absence of a common authority to allocate scarce opportunities or determine what is right or wrong or resolve conflict often creates a state of war of all against all, bringing out the worst in mankind. Rationality is thrown overboard, and people tend to sacrifice long term benefits for present gains.

The Hobbesian state of nature can also be a mental state. Believe it or not, every society has" persons (just a few, or perhaps all, to some degree) whose passions overrule their calmer judgments; who are prideful, spiteful, partial, envious, jealous, and in other ways prone to behave in ways that lead to war". There are people, whose unbridled quest for power and domination always sets them at war with others, making peace in communal settings impossible.

To check whether Hobbes's state of nature is a reality that extends Africa's social conditions, it will not be far to infer from Nigeria, this is because as Kenneth and joseph[14] captured it, what appears to prevail is against the provisions of the Constitution of the country in this regard. Principles of democracy and social justice which the Constitution expressly provides are in

[11]Hobbes, T. *Leviathan (1651)' in Hyland P et al (eds) (2003) The Enlightenment: .* A Sourcebook and Reader 9, 2003.

[12] Ibid
[13] Ibid
[14]Kenneth Nweke and Joseph Okwesili Nkwede,*The Nigerian State and Hobbes' Social Contract Theory: An Albatross around the collective will of the people.* European Journal of Scientific Research. April 3, 2019. http://www.europeanjournalofscientificresearch.com (accessed November 25, 2022).

ISSN: 2756-5831 (ONLINE)

comatose. Several years after Nigeria's Independence in 1960, the country is yet to enjoy what democracy the world over, offers. The Nigerian state has consistently and flagrantly abused the provisions of the Constitution which make the desirability of a society built on democracy and social justice a mirage. In their words, the country has continued to witness economic down-turn, poverty, deficit infrastructure, poor governance structure, political violence, ethnic crisis, insurgency and all manner of insecurity with little or no concerted efforts at containing the situation. This position as they presented is further buttressed when Falana[15] clearly asserted that:

> "In the last five years, the federal government earmarked not less than N5 trillion for the defense of the territorial integrity and internal security of the nation. The various state governments equally allocated hundreds of billions of Naira on law and order. In fact, individual citizens and communities paid levies and salaries to young men and women engaged to secure them and their properties. In spite of huge funds spent on security, it is common knowledge that the country is currently grappling with the menace of kidnapping, hostage taking, terrorism and armed robbery being carried out by disenchanted youths. It is our contention that life and property cannot be secured in any country without the provision of adequate welfare for the generality of the people".

From the foregoing, it is evidently clear the social condition is to such extent that security and welfare of the people has not significantly impacted. There is no adequate security of lives and property and the people are wallowing in the fantasy of democracy without anything to show for it. The people who should ordinarily demand for security from their government helplessly resort to all most self-help for their own security, while insecurity and poverty still persist in the land. Those placed in authority of the state appear to have been mismanaging the national economy in a manner that that does not guarantee maximum security and welfare for the people who at several times were robbed of their freely given sovereignty in the guise of conduct of free and fair elections by the Nigerian state and their actors over time thereby eroding the essence of the state as opposed to what obtained in the state of nature which gave rise to Hobbes' prescriptions for an ideal state

Conclusion

From the foregoing, it is unarguable that humanity at large and Africa in particular with regards to her prevailing social conditions has a significant lesson to learn from Plants and its ecological metabolism. As previously observed, plant metabolism considerations has been alien to contemplations and plausible explanations in the Africa's social condition question and

[15] Ibid

solutions. This paper as earlier noted, significantly highlights a shift away from a human centric view of nature which is actively happening in many areas especially with regards to human's deeply embedded not-so-special primate brains such as humans to plants. In this direction, it is pertinent to also situate plants properly. Plants are also living organisms[16]. They are primary producers but animal consumers that are known to be incapacitated in terms of locomotion and movement. They are existentially stationary with almost everything working against them. For instance, the rains, sun, thunders, including their fellow plants compete for nutrients, attack them and come down upon them. Yet they are interestingly able to grow, stand and survive under the sun, receive, convert metabolites which give them protection which enables them provide food, oxygen and takes away carbondyoxide as man's mess, reusing it to provide food for man again. The trajectory of such in the forgoing is that they try to maneuver to such extent that they can live. Yet man is still a threat most especially as it affects environmental degradation.

Thus, to this ends, a trans-species perspective requires us to transform how we deal with other species such as plants in all aspects of living from a model of exclusivity to one of inclusion. This means finding ways to live that allow, to the best of our ability, all to thrive. This research proposal therefore brings up a very good issue about the relationship between humans and plants and underscores their symbiotic relationship that possibly exhumes deep lessons from plant metabolisms which echoes live and let live prescription for sustainability of the eco-system.

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