The Theory of African Fractals and the 2015 Elections

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Abstract:

This papyrus seeks to apply the theory of African Fractals to the explanation of the conduct of the 2015 elections in Nigeria by INEC. In a previous editorial for the *African Journal of Criminology and Justice Studies*, Agozino attempted to apply this theory of African Fractals to previous elections in Nigeria and in other parts of Africa. In brief, the theory posits that what is taken as a chaotic pattern of organization by Africans from western perspectives is indeed a deliberate, dynamic, defensive and survivalist strategy by Africans as a people who have had the peculiar history of being hunted as prey for about 1000 years and would not therefore be expected to organize their social environments in easy-to-control Cartesian grids preferred by Europeans for obvious purposes. Ron Eglash has observed that modern computing engineering has borrowed these very same principles of African fractals to design the internet as a web that is difficult to control and that such designs of complex fractal, infinite, fractional, recursive,

self-similar, self-governing, scaled and interconnected designs are more common in African architecture, town planning and belief systems than in any other culture. Horace Campbell extended the analysis to the Obama 2008 Democratic Party nomination campaign as a model of 21st century politics. Abdul Bangura has also applied these principles to the complexity in the thoughts of African writers. This papyrus examines the 2015 elections in Nigeria to see if there are manifestations of fractal principles in the organization of the contests and the implications for Nigeria.

Introduction:

'Not even a saint put to serve the Nigerian ruling classes and their social system can be much better (than INEC officials). In fact, if a saint is inserted into the Nigerian social system to regulate the struggle for power he or she will emerge from the exercise painted devil-black', Edwin Madunagu.[1]

The 2015 elections in Nigeria conducted by the Independent National Electoral Commission (INEC) was a historic election in many ways and deserve the analytical focus that the equally historic Electoral Institute has chosen to place on those elections. Nigerians having just survived what some called the 'wuluwulu' elections of Professor Maurice Iwu and the A4 formula of crude formation of lines behind a candidate to be manually counted under Professor Humphrey Nwosu's NEC before that, many were

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forgiven for expecting that the term of Comrade Professor Attahiru Jega as INEC Chairman may produce no remarkably different results in a country satired as 'jagga-jagga' (or in fractal ruins) by a popular musician. The above epigraph from the first paragraph in Madunagu's book is suggestive of the importance of individuals in history (and Madunagu devotes a lot of his writings to the study of the biographies of historically, politically and theoretically consequential individuals even while emphasizing the energy of the masses) but at the same time indicates the limits of individualism in the pursuit of massive societal change.

By suggesting that a saint in Nigeria would soon be painted devil-black, Madunagu may be trying to indirectly critique the racist imperialist ideology that regards Africans as a race of devils based on their skin pigmentation just as Malcolm X tried to reverse that stereotype by calling oppressive white people the blue-eyed white devils. True to Madunagu's prediction, the selection of a former president of the radical Academic Staff Union of Universities, under whom the union was banned by the military regime of Ibrahim Babangida, to succeed another ASUU official as INEC Chairman, exposed Jega to attempts to ridicule his name and paint him as an ethnic jingoist who was out to favor his part of the country, an allegation that he immediately debunked with demographic statistics cited as the bases for the allocation of provisional voting cards. But the suspicion continued to the very end when a prominent supporter of the Jonathan administration attempted to disrupt the collation of votes and the declaration of results with allegations to his face and in front of cameras that Jega must have rigged the results so-far announced. Jega's return to the classroom after his INEC chairmanship serves as

another attribute that may qualify him for Madunagu's beatification as a 'saint' especially given the heroic welcome that he got on campus where he was a former Vice Chancellor. We wait to read Jega's original contribution to the theory of the electoral process now that he has returned to the classroom. As Madunagu implied, the analysis of the conduct of any election is beyond the question of whether the election officials were saintly or sinful but must be based on an understanding of whether the organization of the election by INEC was done to serve the masses or to serve the ruling class or both.

This papyrus offers a cultural study of the elections that shares the interests on class analysis but goes beyond classes to indicate how a better understanding of all the struggles that form the political culture in any country would help in the efforts to deepen the democratization of a militarized civil society as was argued elsewhere.[2] In that publication, which cited Jega in the clarification of the concept of civil society, it was suggested that theories of the social contract underestimated the violence inherent in the civil societies that supposedly emerged from a brutal or child-like state of nature, according to bourgeois philosophers. On the contrary, according to Antonio Gramsci, the civil society under capitalism continued to be characterized by militarism and war with political strategies limited to the choice between wars of position and the wars of the trenches; and despite the fact that hegemony or intellectual and moral leadership remained the best strategy. This papyrus suggests that a better understanding of the cultural technologies that our people have developed for centuries to maximize survival against the odds could help us to understand why the conduct of the elections by INEC under Professor Jega may have produced some apparently contradictory patterns.

A major theme in the international news report on the 2015 elections was that of chaos but this papyrus suggests that a better understanding of the theory of African fractals may help us to explain some of the patterns of the election outcomes better, chaos and all. This introduction will be followed by a critique of the conservative ideology that seeks to exercise hegemony by denigrating anything that does not look straight and easy to control whereas absolute control is very rare in the real messy world. That section will be followed by an exploration of the key principles of African fractals for the benefit of those who are not familiar with the theory but with a tentative application to the 2015 elections. Finally a more detailed focus on the fractal patterns observable in the elections will be highlighted before the conclusion.

The Imposition of Order and the Persistence of Chaos

The theory of African fractals reflects the fact that life is essentially chaotic and not as ordered as the Eurocentric Cartesian logocentrism would like to have us believe. However, the question for the papyrus is not the moral question of whether chaos is good or bad; chaos is not always a destructive force, nor is it always a positive force. Wherever we look, we fail to find a permanent imposition of order in any society because order is necessarily always contested and contentious. When we look more narrowly at elections that are conducted by imperfect agencies that are staffed by essentially imperfect human beings who are prone to error, have limited resources, uneven skill-sets, variable temptations of corruption, are swayed by class-gender-ethnic-religious interests, and

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sometimes by simple incompetence, given that the human beings for whom electoral processes are designed are guided by partisan, class, gendered, ethnic, religious and selfish interests themselves, though ignorance also abounds. There is no such thing as a perfect election anywhere in the world and there is no evidence that all we need are perfect elections that are perfectly orderly and without any drama or chaos. Elections are by nature very chaotic processes and events over which electoral officials attempt to impose some order while politicians and their supporters strive to take advantage of the situation, orderly or chaotic as it may be, for victory over opponents in electoral contests.

There is chaos all over the world despite Cartesian attempts to impose order but Africans tend to prioritize fractal principles in their chaotic social organization compared to other cultures that tend to emphasize order in their social organization despite the fact that chaos or fractal principles persist in every culture and even more abundantly so in wild nature. The goal of social organization is never to eliminate complexity, infinity, self-similarity, fractional dimensions, scaling, recursion, or interconnectivity but to manage the chaos in ways that appear more productive or more reproductive. The social organizations that approximate or aspire to highest degrees of control over messy or chaotic events are found in sports and in the military industrial complex where lines are drawn and fought over for supremacy in offense and defense, or simply to try to win the contest. Yet despite all the training, equipment and readiness for wars to end all wars or for sports records that appear unbreakable, it is obvious to all that there is no such thing as an orderly war or sports for the battle front or the field of play is always a big mess, or almost always so. Human societies and nature tend towards both chaos and order but

Eurocentric Orientalism would suggest that chaos is more common in Africa than in other cultures. There is no evidence for such a hypothesis because even cultures that are indigenous to colonized societies outside Africa also prefer not to use predominantly fractal designs as much as Africans consciously do, according to Eglash. In other words, African societies do not tend to prefer fractal designs simply because there is a preponderance of fractals in nature and Africans are supposedly closer to nature than Europeans. Africans are not closer to nature than Native American Indians who tend to prefer three-dimensional Euclidean patterns in their designs. Moreover, a European, Georg Kantor, discovered the Kantor Sets of lines that are capable of infinite subdivisions but his peers saw his numbers as irrational and ignored him long before he ended up in a mental hospital. There are also fractal patterns in some European designs but the preponderance of fractal designs across Africa is the reason why Eglash called them African fractals.

Since politics is regarded by some as the continuation of war by relatively peaceful means while war is also known as the continuation of politics by more violent means, it is important to remind ourselves that neither war nor politics is ever perfectly orderly despite the Cartesian will to order things and people in perfect grids that are supposedly easier to control but never controlled in entirety. Fela Kuti dramatized in 'Unknown Soldier' how a thousand soldiers marched to his house and lined up waiting for order but what followed was absolute mayhem. Political practice is always a result of social creation, traditions, and struggles but the social life is indeed part of the natural world we live in and interact with as part of our built environment. Since fractals are common in

African designs, this papyrus will analyze the patterns of the conduct of the 2015 elections by INEC in Nigeria to see if the theory of African fractals will be relevant in explaining some of those patterns. But first, what are fractals and why are the principles applicable to the 2015 elections?

What Are African Fractals?

According to Eglash, there are five principles that are common in fractal designs but each one of them does not have to be present in order for the design to be understood as fractal.[3] I have added the principle of interconnectivity even though it is not a feature exclusive to fractals, but applicable to all, designs. I will suggest that interconnectivity is more crucial for understanding fractal designs than for analyzing Cartesian designs in which interconnectivity is taken for granted. Once we introduce the element of interconnectivity to the reading of fractal designs, we may be forced to move beyond the discourse of fractals and begin dialogues on holism in such a way that what Eglash saw as African Fractals can be seen as holistic in Africana arts and culture, including the conduct of elections. The six elements of fractal designs commonly deployed in Africana politics, architecture, belief systems, town planning, music and arts, are as follow:

•**Recursion** – a circular process in which the output of one process becomes the input for the next process with results endlessly recycled and repeated in 'iterative feedback loops' of the sort that I saw my mother paint on the bodies of women, similar to the Golden ratio or royal triangle common in ancient Egyptian architecture.[4] This is also visible on a

larger scale in recurring social units and social organizations from the family, friends, work group, neighborhood, locality, state, country, region, to the globe. People of African descent tend to build this motif into their arts and politics more than other cultures, for some strange reason.

•**Scaling** – the jagged edges of the coastline or the clouds in the sky, the foliage of the forests, the registration of voters, distribution of provisional voting cards, or the different shades of public opinion can be referred to as scaling because there are similar patterns at different scales of, for example, shades of opinion about the fairness or freeness of the elections, like in fractions of a painting or fragments of a sculpture, architecture or music generally but more so among people of African descent.

•**Self-Similarity** – the parts do not have to be identical in order for the pattern to qualify as fractal. Self-organizing patterns proliferate in Africana arts and politics on the African continent and also in the African Diaspora. Although the conditions for the 2015 elections were disparate across Nigeria, the actual conduct of the elections by INEC appeared self-similar across the country, just as in every election.

•**Infinity** – My mother could have continued infinitely painting interconnected, recursive, concentric circles at different scales on bodies of women if she had the materials and the time. Fractal paintings on canvas have a way of overflowing at the edges to indicate a continuation of the scene outside the frame to infinity and beyond. Many mathematicians are not fond of the idea of infinite fractals and some are hostile to it, dismissing the Georg

Kantor sets as irrational patterns, according to Eglash.[5] If Kantor had checked with African designers, he may have saved himself from insanity because the infinite lines broken down into smaller lines that his European peers thought were crazy were common in Africana designs. This may not appear applicable to the conduct of the 2015 elections by INEC for there were logistical problems defined by scarcity rather than by infinity in resources and time but the way that some politicians appeared to have had infinite resources while the people seemed to have shown infinite patience during the elections may appear relevant.

•**Fractional Dimensions** – Scholars and the general public are more used to thinking of policy dimensions in whole numbers (health policy, foreign policy, electoral policy) and art historians follow suit by discussing a single work or a single artist or genre as self-contained but the theory that frames the discussion of African Fractals assumes that dimensions can be fractions too in such a way that arts are not simply arts but what Du Bois called 'the spirit that knows beauty' (an exact translation of *ima mma*, to know beauty or to be beautiful in Igbo language),[6] or what this papyrus will suggest is a fraction of the survival strategies open to people of African descent and other oppressed people against incredible odds. We will see the extent to which INEC could be said to have deployed fractional dimensions in the design of the elections.

•**Inter-connectivity** – The fractional dimensions of fractals are infinitely connected or articulated rather than being separate, raising the question whether they are fractal or holistic. Theorists of fractals tend not to include this principle among the elements but

this papyrus argues that it is the most important organizing element in fractal designs. Horace Campbell refers to something similar as the principle of self-organization that, according to him, Barack Obama deployed in his 2008 presidential campaign with the recursion of self-similar support groups at different scales and fractions, with virtual interconnectivity online and a mass passion for change from the grassroots up.[7]

Expectations and Observations of Chaos during 2015 Elections:

Most observers have praised the conduct of the 2015 elections in Nigeria and a lot of praise has gone the way of the Independent National Electoral Commission for organizing the elections successfully without as much violence or chaos as predicted by the international media and as alleged by some politicians. Prophecies of doom came from the *Los Angeles Times* (and many more media outlets) which reported on March 29 while the votes were being counted that there was fear that anarchy will be prevalent, fearing that the results would be disputed and end up in violence. There was violence all right but not on the scale feared. More than 200 Nigerians were reported killed during the elections but there was a sigh of relief that the casualties were not as heavy as it was at the end of the 2011 elections. The security chiefs had insisted on a six week delay to enable them to address the security situation especially in the North West country. People wondered whether the security agents could do in six weeks what they failed to do in six years under President Jonathan.

With interconnectivity between Nigerian forces and the forces of neighboring countries also increasingly under the threat of Boko Haram, and amid the trial of dozens of Nigerian troops for the treasonable offense of desertion, the troops gradually seized back territories that were occupied by the militants but never managed to bring back any of the 260 or so school girls seized from Chibok and intended to be used as sex slaves. The interconnectivity between the neighboring security forces is an indication of the need to apply fractal thinking in the direction of increased African unity with 55 states under a federal constitution for Africans at home and abroad to thrive in.

INEC agreed to reschedule the votes probably because INEC officials were aware of the fact that Nigerians are used to the African fractal orientation to time-consciousness which appears more relaxed than the European insistence on the chronometer. It was speculated that a weak incumbency was simply seeking to buy time when faced by a resurgent united opposition that promised the first ever transfer of power from an incumbent political party to a party of the opposition coalition. Eventually, Jonathan tried to leave a legacy as perhaps the first sitting president in Nigeria to concede defeat in an election. Let us examine some of these events to see if they exhibited fractal principles and not simply the principles of logocentrism.

The postponement of the elections by six weeks reflects the fractal principles outlined above and a proper understanding of the non-lineal geometry of time as invented by ancient Africans in the forms of the calendars still in use today, according to Diop,[8] will help to explain why Nigerians did not think that a few weeks extension was such a big

deal. Americans with almost a fixed calendar for their general elections would probably not stand for that kind of postponement but even they are not completely immune to delays that may result in the extension of the voting hours. Moreover, in opposition to any suggestion that US elections are more orderly than Nigerian elections, the Americans deliberately incorporate fractal principles by allowing absentee voting and early voting with what they call provisional ballots. By insisting on everyone voting on the same day, INEC may be trying to be more organized than the Americans whereas a detailed study of the fractal principles that animate African culture and political participation could encourage INEC to allow campaigning to start two or more years in advance through party primaries for the presidency. Rather, the will to be in control of every micro detail forced INEC officials to only lift the ban on campaigning a few months to the election and then tried to space the election day into two days, two weeks apart, an unconscious application of the fractal principle of recursion that would be rare in cost-conscious American elections where the second day of voting to select state governors and state assembly representatives could have been done on the same day as the presidential elections to save money but also not to lose voters who may not want to make another trip to the polls in a few weeks.

The distribution of provisional voting cards by INEC did not follow straight lines simply because our people tend not to settle in straight lines but tend to congregate in megapolies while rural areas tend to be sparsely populated. In the US, African Americans used the fractal patterns of their settlement to successfully challenge discriminatory electoral districting in Atlanta, Georgia, according to Eglash. The insistence on the use of only the

provisional voting cards as machine readable forms of identification on the voting day when some voters, including President Jonathan apparently, could not be validated on the voting day. In the US, this will be a clear and simple case of voter suppression and INEC would be dragged to court to allow the use of other forms of ID to validate voters if necessary. Requiring a photo ID in some states in the US led to allegations of voter suppression because there was no evidence of massive voter fraud to combat and voters who may not have voter IDs may be over-represented in disadvantaged communities. As Obi Nwakanma opined in his 'Orbit' column for *The Vanguard*, INEC could have allowed the use of National ID Cards, drivers' licenses, national passports, etc., to validate voters. INEC should have applied the African fractals principles to recognize multiple forms of identification. INEC should be in the business of making it easier for Nigerians to vote. Biodun Jeyifo critiqued Jega in his 'Talakawa' column for *The Nation* on the tardy distribution of the PVCs which were not yet completed by the time of the earlier date for the election, but which still were not completed 100% even after the six week extension. INEC reasoned that some people did not come forward to collect their cards on time. Jeyifo lamented the postponement of the election under what appeared to be an ultimatum from the security chiefs but conceded that Jega had no choice but to agree to the postponement which apparently gave INEC more time to distribute cards which it still failed to complete and tried to rationalize with the claim that there would never be a 100% voter turnout anyway.

Some pictures showed up with allegations that there were child voters in some parts of the country. If this is true because children could have been casting votes for adults who

could not personally go to the polling station or it may be because the children in the pictures were old enough to vote but looked stunted due to malnutrition. True or false, fractal thinking will lead to a questioning of why children are not allowed to vote as part of their civic education. If the majority of adults do not bother to exercise their franchise, why continue to exclude children from the universal franchise? This may be a task for the legislators to lower the voting age to JSS 1 age of 12 if possible.

Moreover, to get more Nigerians exercising their hard-won rights to vote, INEC should seek to incentivize the voting experience for the voters. We all know what the politicians get out of the votes but what about we the people? INEC could independently budget 100 million naira to be awarded to lucky voters across Nigeria as their election dividends without waiting for a legislation to be passed by a do nothing national assembly. This will definitely drag more voters out to the booths but there will still be some who could not make it that day due to understandable pressures in life or distance from polling booths. For this reason, INEC should consider allowing provisional voting, absentee ballots and early voting as is the case in the US, rather than insist on a lineal one day – take it or leave it deal.

The public performance of shame by a top Jonathan supporter during the announcement of results, for which he later apologized to Nigerians, can be seen as an effort to introduce more fractal complexity into the electoral process with what Nigerians call *gra-gra* or machismo. President Jonathan commendably doused the flames by historically conceding even before all the votes had been tallied. The maps of the electoral results displaced

interconnectivity of the entire country even if the incumbent party was beaten back to two regions out of six but the lines on the maps were not straight forward in lineal patterns; they had jagged edges as expected from the theory of African fractals and as is found throughout nature and throughout the world but more likely to be consciously applied by Africans.

One of the most fractal organizational practices in the 2015 elections was the media coverage by *Sahara Reporters* online. Apart from the video logs of interviews and online opinion editorials and research leading up to the election day, SR provided blow-by-blow updates of he election results unofficially ahead of the official results with little or no variation between the two sets. This citizen journalism may have helped to check some plans to rig the elections beyond the polling booths' results. INEC should consider incentivizing such citizen journalists by providing a budget at each election to fund independent news reporters to help to monitor the unofficial results and thereby help to hold INEC officials more accountable. INEC should also consider Saharalization of the results reporting by having a live update of the election results on its website as the results trickle in. INEC may also choose to develop INEC TV online to archive video logs of interviews with officials.

Conclusions:

The mythology of Esu Elegbara has been used to stress the point that Africans tend to view the world as messy and complicated in its interconnectedness.[9] Sometimes, the fractal patterns are placed there to trick the unsuspecting road traveller and sometimes it

is the traveller who spins webs to try and catch a prey or two. Similar mythologies are found across Africa with Anansi the spider and Mbe the tortoise as relatively fragile beings that manage to survive in the big jungle of life by relying on their wits and not necessarily on their strengths. Africans having been hunted for such a long time in history, may have developed fractal design patterns as survival strategies. Mokwugo Okoye suggested as much in *Storms on the Niger* where he quoted European travellers' tales to indicate that they met beautiful people who were well fed and long lived in orderly African societies long before the development of Africa was arrested by the intrusion of Eurocentrism and imperialism, resulting in widespread chaos.[10]

If the chaos theory of African Fractals played any role in helping our ancestors survive centuries of being hunted as prey, maybe we should not be in a hurry to disregard those fractal principles in our efforts to design a fairer society. If western engineers and even politicians are eagerly studying and applying the principles of African Fractals in their designs, we Africans should be even more enthusiastic in studying and applying the lessons of the powerful fractal technologies that the rest of the world is borrowing from Africa and applying to the design of things like the internet.

As we seek to deepen democratization in Nigeria, it may be necessary to move slightly away from fractal design principles sometimes by streamlining electoral practices at the local levels. For instance, Local Government Elections are supposedly required every two years but our fractal organizational principles have left this at the discretion of state governors who tend to ignore elections all together and appoint cronies instead or rig the

elections when held occasionally to appoint party loyalists as councilors and chair persons. INEC should be able to time-table Local Government Elections and Supervise them every two years across the country. The country could take this further by requiring the election of traditional rulers or mayors and town council members every four years to drive democratic principles into the fabrics of the nation instead of allowing our preference for fractal organizing principles to permit the enthronement of feudalism as a bedfellow with democracy in the modern age.

The disadvantage of analyzing the 2015 elections from simple linear dimensions without any thoughts or consideration for the non-linear geometric principles of African Fractals common in African designs and culture would be a disservice to knowledge and to the nation. It is hoped that this papyrus will stimulate interest in the study and application of these principles to help advance the survival strategies of our people in the knowledge economy of today. Abdul Bangura illustrated the usefulness on this interest in African fractals by using the principles of complexity to study the work of African writers like Chinua Achebe whose simple stories become more complicated and more meaningful against the background of African fractals.[11] As with what Achebe called a balance of stories, so also are elections as demonstrated by the tentative application of the principles of African Fractals to previous elections in Nigeria by Agozino.[12]

Following the examples of Ubuntu in South Africa as a philosophy of justice based on forgiveness and reconciliation as demonstrated in Nigeria itself by those who have suffered massive state sponsored violence that claimed around 3.1 million Nigerian lives

during the Biafra war alone but without anyone seeking revenge killings; the hundreds of lives lost during the elections should encourage Nigerians to apply fractal thinking in the search for justice. For instance, instead of waiting almost in vain for the punishment of violent offenders in a country where not a single terrorist appears to have been arrested, tried and convicted, a country where very few cases of corruption have been successfully prosecuted under the philosophy of punitive justice with some convictions followed with state pardons, maybe we should try the peacemaking approach to justice with emphasis on healing the wounds inflicted on society by violent offenders. For instance, if INEC budgets one million naira to be awarded to the families of each of the 200 killed during the elections, it will not break the bank. If the Federal government follows suit and awards substantial reparations to those who suffered the state-sponsored violence against fellow Nigerians during the civil war, it will be an intellectual and moral lesson about the value of the lives of every Nigerian and a message against fatal election fracas and disruptive fractals in the future; otherwise the mass abduction of school girls and village women and the terrorization of the population may continue especially during elections if the politicians brag about the mass violence committed by them on behalf of the state to make them national heroes rewarded with public offices and ill-gotten wealth.

Finally, the level of illiteracy in the country must have contributed to the frustration of efforts to register more voters and bring out the voters who knew how to cast their ballots. Without the ability to read and write, it must be difficult for millions of our voters to make their intentions clear on the ballot papers. Consequently, the present administration of President Buhari should prioritize the erasure of illiteracy from Nigeria

within four years. The return to the classroom by Professor Jega is an indication of how much the former INEC Chairman estimates the importance of education in supporting a healthy electoral and political culture. The 'saintly' performance of some highly educated Nigerians in public office is the measure of how much the country is losing by maintaining a culture of mass illiteracy in a society that aspires to be democratizd. Certainly, not all the problems that confronted INEC during the 2015 elections could be solved by INEC independently or even exclusively by the government. Nigerians must play their parts individually and as groups, within families, in the communities, organized civil society, across the country to support the spread of modern education as a dessideratum for free and fair elections to hold and for Nigeria to become a prosperous country. But more than just book literacy, political literacy needs to be promoted to ensure that no misinformed but highly educated traditional ruler anywhere could threaten Nigerian 'settlers' to vote for his preferred 'indigenous' candidate for state governor or risk being drowned in the lagoon and be taken seriously by some supposedly highly educated 'subjects'. The African fractal trend of citizens who are resident outside their places of origin and who won elections in their places of residence should be lauded by INEC as abiding by the federal constitution.

Endnotes:

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