

Droppin’ Science for the Struggle: A Purposeful Profile of Professor Sylvester James Gates, Jr. in the Era of the “New Jim Crow”

by

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Abstract

This essay traverses the contours of the life and work of celebrated theoretical physicist and professor Sylvester .J. Gates, Jr. in connection with the power mechanics of physics as a social arsenal for political emancipation, particularly through aesthetic science. Specifically, attention is given to Gates’ more recent research on aesthetical *Adinkra* mathematics as representations of supersymmetric algebras, his research team’s location of Matrix-like computer coding within genetic material, and how both sit comfortably within African and African Diasporan wisdom and traditions, Akan and otherwise. Gates is hailed as an African American thinker, thus African peoples are encouraged through the lessons provided from his life and work to channel their energies toward a deeper understanding of nature and personification during the ongoing struggle against hostile social and political forces.

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Sylvester James Gates, Jr. (to the left) has a number of "firsts" to his name. His doctoral dissertation at M.I.T. was the first at the university on supersymmetry. In 1994, he became the first recipient of the American Physical Society's Edward A. Bouchet Award, given to a minority physicist who has made significant contributions to his field of physics, in 1998 he was named the first John S. Toll Professor of Physics at the University of Maryland, he became the first African-American to hold an endowed chair in physics at a major U.S. research university as he hopes to see in string theory, the first signs of supersymmetry and perhaps a unification of the four forces of nature.¹

The list of achievements of Gates are many, he has published more than 120 research articles in his area of theoretical physics, written chapters in several books, and coauthored *Superspace*,² one of few texts covering advanced physics known as supersymmetry (SUSY), the study of cross-sectionality between the four known forces of nature—gravity, electromagnetic, weak nuclear, and strong energy.³ Before receiving the Bouchet Award in 1994, Gates received the National Technical Association's Technical Achiever and Physicist of the Year awards in 1993.⁴ His achievements since then have brought him a membership in President Barack Obama's Council of Advisors on Science and Technology in 2009, the National Medal of Science Award in 2013, and a rare seat among the professorial astute as an endowed chair in physics for the University of Maryland that has been his professional home for over 30 years, also in 2013.⁵ Hence, he has a curriculum vita of more than 100 pages detailing his teaching, service, publications, speeches, awards, and honors.

Gates is an extremely rare mind and man as he is one of a very few physicists of African descent in America, a population of about 2% in the relatively small physics field, and .01% of the general population.⁶ Why he should be of interest to physicists and non-physicists alike today is both simple and complex. Suffice it to say that Gates, as man, professor, and award-winning physicist, represents the best of what may become of human potential when hatred and repression of opportunity are disavowed not only as sociopolitical obstructions to so-called civil rights, but further as a problem of social and scientific retrograde against the cosmos.

At a time when the U.S. once again bares itself as the poster of barbarism and nihilism toward native people and processes, most strikingly concerning the grotesque murdering of African Americans by its police force,⁷ Gates rises as the mind and face of possibility for unification in nature at levels far beyond the reach of terrestrial supremacist orientations. Those of us in support of seeing every corner of our planet surpass the cosmic mediocrity of supremacist activities, on racial and all other terms, must be conscious of empowering work like his that move us beyond the asymmetrical, unimaginative living that we as a human race have in too many ways become accustomed to.

Freedom and respect for personhood remains indoctrinated, it seems, in the systemic psychology of racism that the United States and the rest of the West was built upon, one in which the rights of the state to repudiate, brutalize, murder, rape or otherwise violate people of color, and namely African peoples, was given the name 'Jim Crow'. Thus, in the era of the New Jim Crow we must pose new questions and present fresh solutions to old problems that bring us closer to nature. The struggle, referring to the fight against racism and all forms of oppression creating chaos in the lives of African people, must become more discursively and methodically scientific.

Imagining More and Making It So

To make clear the importance of Gates' work to world society, we should cover a bit of historical ground. The 1990s, we should recall, was not only a remarkable time for Gates, but also a particularly volatile era in American race politics and social thought. What stands out in the minds of most African Americans are the many protests, debates, and other soul stirrings over the videotaped police beating of Rodney King, the subsequent trial and acquittal of the four guilty policemen, the Los Angeles revolt in response to the not guilty verdict, the O.J. Simpson trial and media highlights of that verdict,⁸ the continuation of Reagan's so-called war on drugs from the early 1980s with Clinton's "three-strikes" mass incarceration law,⁹ and sweeping national policy reforms targeting the control of Mexican migrations, especially in California.¹⁰ Each of these moments in time illustrated the unequivocal polarization of racial-ethnic solidarities in the U.S., with African and Mexican communities out casted.

Memory of international news in the 90s likely recalls longstanding political unrest and governmental coups as vestiges of the French colonial legacy gripping Haiti, the first African nation widely known to have defeated European imperialism.¹¹ Finally, standing out in the minds of an even greater number of people around the world is Nelson Mandela's release from an appalling 27-year long political imprisonment in his native South Africa at the opening of the decade, on February 11, 1990.¹² It strikes a strange chord now in wizened hindsight to consider that only a very small number of Africans in Africa and the Diaspora were aware of the life and contributions of one such Gates at the time, even as he received national award after national award for encouraging the world to see beyond the narrow confines of social realities not necessarily through political ideology or religious belief, which vary, but through *scientific possibility*, which does not.

Today is not much different. Most African Americans, for instance, even those grounded in a self-asserting ideology of dignity and community development much like Gates presents himself to be,¹³ find themselves feeling tied down by racism, neither able to deny the problem of it in a supposedly democratic society for any extended period of time as many less melanated people may do, nor immediately able to dissolve of it while having to regularly confront its existence.

Unfortunately, the oft result is a dilemma-ed life, literally anchored by the gravitational pull of dark, heavy emotions and confrontations that limit the imagination and range of one's life experience.¹⁴ Fortunately, Gates' supersymmetry research helps to embolden for us the line between unhealthy, reactive resistance to racism and oppression, and the kind that is electrifying, assertive and enduring.

Gates' work relates to the social and political problems facing Africa and the African Diaspora through its capacity to both transform the ways in which we think of and go about war against them, and support how we live and interact with each other. Ultimately, we must amass the rules that dictate how to see through, above, below and around racist people and strategies rather than to always engage them on their base terms, and physics provides a viable rulebook.¹⁵ Base level engagement of racism serves more to drain us of our energy and potential for development than it does to actually extinguish it. We must also gain the vision needed to always see ourselves as connected better than our conditions. This super-vision helps us to maintain our sanity during the struggle. These combined are the *discursive tools* to be used in the struggle.

It may at first seem difficult to conceive that we are charged to see and move beyond the constraints of oppressive conditions, even when police states and murder are among them. This, however, is what supersymmetry is all about on a human, non-technological level and Gates is primed to prove it. The following sections are meant to make plain the science behind how we will win in the struggle against racism and other forms of oppression without any discussion of recent news headlines or legislative changes, understanding that either would be reactionary at a time when what we need are more scripts for total victory, and endurance. Here and now do we have an African American man conceiving of existence on energetic and physical levels that reorient our inner and outer perceptions away from "standard model" existence and closer to a cosmological view of boundlessness and interconnectivity by marrying supersymmetry principles to those of African origin via the Akan wisdom of Ghana.¹⁶ Though the degree depends on a number of scientific factors, it stands within mathematical reason that what we perceive and emit has a direct correlation to how we survive our experience; and, more importantly as it relates to racism and brutality, a connection to our conceptual embodiment and corresponding influence over others. In effect, we can see and imagine, and through the personification of our inner aesthetics, our *methodical arsenal*, make it so.

A Physics Lesson on Anti-Imperialism Imperatives

The song *Mathematics* by Mos Def (a.k.a. Yasiin Bey) now has a whole new meaning in light of recent advances in physics pioneered by Gates and his colleagues.¹⁷ In the song, Bey informs us that passing "short and tall social hurdles" is possible with the understanding that "it's all mathematics." Gates himself calls mathematics our sixth sense, like another set of eyes, made most viable when we appreciate its versatility.¹⁸ Perhaps the biggest problem with the implementation of this wisdom amongst everyday people, however, is less about mathematical appreciation than the fact that some characters are undetectable in plain sight.

To use the nomenclature of physics, some social problems have roots that reside outside of our visual range on the electromagnetic spectrum, even though they still exist within range of our direct sensory management.¹⁹ Indeed, while mathematics may be the processional language of nature, we must do more than understand numerical ordering and formulas in order to live the highest possibilities of peace and abundance. So, the question looms. On a social level, what can we really do with physics when the equations of our outcomes seem themselves uncontrolled by us?

The answer is that we can do anything imaginable. Most importantly, we can multiply our power by continuously exercising the knowledge that energy, and our energetic influence therein, is boundless and indestructible.²⁰ In at least two recent lectures on supersymmetry, Gates demonstrated that the protons and quarks residing inside of atoms are irrevocably bound together.²¹ If one were to try and pull away or squeeze part of a proton from its source, then what would happen is another quark composed of protons and electrons, etc., would be created in its likeness. In other words, due in part to what physicists refer to as “Quark Confinement,” energy is divisible and eternal, never to be destroyed or separated from its source. Using negative powers of 10 on digital images of (presumably) human blood cells until the biology and chemistry of the cells were invisible at 10^{-18} on the electromagnetic spectrum, he further demonstrated why physicists like him theorize that life is a string of mathematically decipherable events at all levels of nature, hence the moniker of *string theory*.²²

As Gates described his work, theoretical physicists are most concerned with the discovery of functions and functional equations that explain how energy operates among the four forces in nature, “within all dimensions” of space and time.²³ Physicists like him recognize that as we act upon nature, nature acts upon us, though neither are always easily seen or understood. Like the ends of a spike in a really big wheel reflecting a “kind of mirror property” in nature, every form of energy and matter is best described as having “superpartners” that carry on their imprints throughout the dimensions, both the seen and unseen.²⁴ The result, a symmetry that guides nature, is the supreme example of what people commonly refer to as “Universal law”. Our position within this symmetry is solidified by our material and energetic composition as “nice” patterns of particles like quarks and leptons arranged by the four forces, each working in connection through unseen boson particles—or *sparticles*—to form and transform our energy in relation to our actions and reactions within the Universe. The proverbial phrase professing “the gravity” of things we perceive, do, or experience is in fact factual in function.

Gravity in particular holds deeply distinctive importance to us as a natural force.²⁵ Advancing earlier theories by mathematicians like Newton, Einstein, and Higgs, Gates metaphorically explained the mechanics of gravity as a kind of cosmic rubber band surrounding the Universe, causing dents and ripples throughout space commensurate to the force of matter and energy affecting it.²⁶ The larger the object carried by gravitons in the environment, the heavier the dent and larger the span of the ripple.

The ripples of gravity resemble in function the waves of electromagnetism, etc. What, however, are the forces pushing or energizing the energy of the forces? Theoretical physicists view gravity as having superpartner “gravitino,” which carries its force throughout the world and Universe, electromagnetism the “photino”, the weak nuclear force the “wino” and “zino”, and the strong nuclear force the “gluino”.

If photons exist that allow you to see what is in front of and around you, then photinos, their superpartners also exist and allow you to somehow sense what is beyond the functioning of photons on the electromagnetic spectrum. Gravitinos act on seen and unseen matter that we might otherwise regard as weightless. The superpartners of the weak nuclear force, the zino and wino, and the strong nuclear force, the gluino, are thought to be the “ultimate authors” of our reality, as the forces that hold together our atomic and subatomic parts.²⁷ Each of these can be represented by mathematical equations, and every action and reaction in world phenomena can therefore be measured and/or manipulated through various forms according to their function within the connected fields of existence across dimensions.²⁸

Whether or not inanimate things like thoughts, emotions, and the various styles they emit fit within the scientific parameters of contemporary physics has not been openly explained, but, interdisciplinary scholarship has shown time and again that cognitive and emotional materials, whatever they are, have the power to animate us into movement,²⁹ or weigh us down like gravitational anchors,³⁰ making the principles in both the Standard Model and its supersymmetry extension as applicable to all human activity as it is to technological creations used on Earth and in outer space. Fluency in physics means an understanding and constant awareness of the rules that govern the type and degree of relationship we as sources of energy have with everything and everyone ever in existence.

For people of African descent, so often caught between a natural desire to maintain tradition and the social forces of existing in neo-colonial environments that dialectically oppose our traditions,³¹ indeed our lives, this is a necessary revelation because it speaks affirmatively to the connections that we sense to ourselves, each other, the ancestors, other transitioned community members, the planet, and all things in creation.³² Our perceptions and possibilities expand exponentially through understanding of physics so that we not only refer to the presence of our ancestors, the Creator in all of his-her names, the energy of a person or place, etc., but we begin to very consciously make the connections in order to amass energy and grow in spirit, mind, and material for knowing that we and all that we intuit *are*. Consequently, what surrounds us and *what becomes of us* begins to balance, or become symmetrical, according to our awareness and gravitational pull.

The major task set before us then is to re-appropriate the gravitational forces weighing us down as a result of ongoing and systemic negativistic energy carriers through each mean of the electromagnetic, weak, and strong nuclear forces, seen and unseen, through both discursive and methodical tools.³³ That energy literally never dies, but grows, divides, or transforms according to how we use it should be part of our regular conversation. It should be further combined with the knowledge that space and time are curved, not flat or fading in a single direction, thus making us timeless. Losing sight of our timelessness and transformational possibilities in both the physical and super-physical dimensions of the Universe is the greatest weight to work against us of all, because in its place comes the propensity to succumb to the social and observational at the costs of our imagination, dignity, creativity, and development.

Given that energy can be neither destroyed nor created, we must understand that *that which has always been will forever be*. The first *wom̄an* and mother of the world was African,³⁴ and she will always be. The man who she first delivered into the world as her heir was also African, even if the man she conceived with was otherwise, therefore her sons will always be. As long as the Earth exists, African cosmogony will too and in abundance by scientific law and fact. The major question alongside reactive engagement against all forms of racism and brutality is what and how will we be when this time ends. Beyond the scripted horizon is our understanding that we are necessary to the very revolution of the Earth around the Sun that orders the chaos of our Universe. Therefore, in the wake of any incidence of terrorism or other anti-human activity, our charge as a people is to remain focused on making and remaking ourselves and our environments in the forms of that which is beautiful and functional to life from our worldview.

Staying Connected to the Source

Tapping into our power to see and transform is easier than we might assume after taking it out of scientific terms. For example, physics is the reason that some people can enter into a room and alter its dynamics, including the functions of the people in it, by simply being there. Physics is the scientific explanation for how it is that so many Africans from the continent to the shores of the Americas have commandeered surrender of oppressive forces throughout history without command of major military arsenals.³⁵ Certain people we say have “a presence” about them. The fact is that we all have access to the same powers of “presence,” but some of us have simply figured out how to activate it.

Professor Gates might say that those in the know have cracked the code to the “Matrix”.³⁶ He himself is an example of a man who has managed to decode the restrictive, Matrix-like programming of a system designed to divide his African American senses between fear, dependency and basic struggle for survival. Racial hostility became a conscious part of reality for Gates as a child at about 11 years old; the same year he faced the devastation of losing his mother in physical form.³⁷

However, Gates has proven to be stronger and smarter than the worst of his circumstances.³⁸ In a virtual “War of the Worlds”,³⁹ his versus would-be racial oppressors, he has evaded the Matrix to win by concentration of energy and focus on the bigger, Universal picture of reality that governs all.

For his understanding, he has risen above racism as a mental and spiritual confinement to earn international acclaim and economic success, turn remorse over the loss of his mother into reason for exploration of nature and the purpose of life, marry a like-minded and equally successful African American physician who is also community focused, and have and co-parent two achieving children, a boy and girl, who have grown up to follow in their parents’ dents and ripples, he recently graduating with a baccalaureate degree in cellular biology and genetics, and she in mathematics and physics with plans to further world knowledge of supersymmetry at Harvard.⁴⁰ Undergirding his success on the whole is the fact that, however “respectable” to the mainstream power structure he has or has not been throughout his professional career, he has maintained his identity as an African American man, husband, and father.⁴¹ His dignity has meant assurance of a contributing connection to the African American community that largely raised him.

For Gates, math and science never became cause to deny the struggle, but rather to help resolve it.⁴² *He has remained connected to his source.* Often noted, for example, are the years that he spent as a professor in Howard University’s physics department, Director of the university’s Center for the Study of Terrestrial and Extraterrestrial Atmospheres, and President of the National Society of Black Physicists.⁴³ Prior to these, he was Director of the Office of Minority Education at the Massachusetts Institute for Technology (MIT), at which time he spoke openly on issues of access to education and opportunity for African Americans and other political minorities, especially in math and science.⁴⁴ Presently, he stands in juxtaposition of the conglomerated will to erase, deny and otherwise suppress the distinctive position of Africa to the Universe, as lead researcher of a team incorporating traditional knowledge into advanced physics instruction informing contemporary technology and space science around the world. By borrowing from Ghanaian wisdom symbols, Gates and his team believe they have begun to advance the fields’ long trek toward uncovering the first signs of a unified field theory.⁴⁵

In more practical terms, while supersymmetry suggests that there is no separation between the various forms of energy such that we have material influence on every person and object on Earth, and by superstring extension, the universes, certain conceptual and aesthetic properties within African tradition give our powers the necessary shape and form to be seen and felt.⁴⁶ Physics as Gates describes it leaps from the dull, traditional Western curriculum to syncretize with the history of intelligence, grace, artistry, and expansiveness of Africa and African peoples.

Embodying the Aesthetics of the Struggle

When in *The Beautiful Struggle*, artist Talib Kweli said, “The struggle is beautiful, I’m too strong for your slavery,” he seems to have been expressing an understanding that when we recognize the power of our endurance in the fight for justice and liberation we recognize so much righteousness that the struggle itself expresses beauty,⁴⁷ and the strugglers themselves emerge so authentically human as to become impervious to oppression.⁴⁸ The usual result of higher-dimensional particle physics, it turns out, is “a certain aesthetic appeal”, demonstrating what Gates credits Einstein for once noting—that “After a certain high level of technical skill is achieved, science and art tend to coalesce in aesthetics, plasticity and form”.⁴⁹ Whether we realize it or not, our capacity to decipher and outmaneuver the forces against us is innate, though observed only when we unplug from the mainstream program and reconnect with the reverence we as a people have always held for nature, spirit, embodiment, and the beauty in each.⁵⁰

Functions, signs, algorithms or systems, problems, codes, power, etc., are all terms of physics analogous to the basic terminology of Black consciousness and liberation discourses that we use regularly to debate the issues and organize for resistance against racism and oppression.⁵¹ Aesthetics, art, balance, connectedness, multi-dimensions or poly-rhythms, etc., are all terms that have been used to describe the core principles of African and African Diasporan cultures.⁵² It is therefore a testament to the requisite cycles of time and revolution that Gates has decided to name his latest supersymmetry models after the Akan ciphers known as *Adinkra*.⁵³

Ghanaian artist and author Adolph Agbo, described *Adinkras* as “graphical proverbs” with “philosophical, educational, historical, and moral values”.⁵⁴ Like traditional *Adinkras*, Gates’ mathematical *Adinkras* are designed “to represent concepts or aphorisms...that are difficult to express in words”, with “a certain aesthetic appeal” that conveys the functional equation it represents in nature.⁵⁵ As early as 1974, international Ghanaian artist Ablade Glover told us that the highest achievement any human being could attain is to understand the world through aesthetic embodiment, hence, a globally African sentience.⁵⁶

What physicists are now calling a unified field theory based on strings of relatable energy African (American) thinkers, like Wade Nobles, Na’im Akbar, Edwin Nichols, Molefi Kete Asante, Marimba Ani, Cheryl Grills, etc., have long called *wholism* (or holism) in reference to the global African sense of circular interdependence between people, the Earth and people, the cosmos to all, and last but not least, between spiritual and physical life.⁵⁷ All things being connected and dependent on the other for rightness in function and durability, and thus, the aesthetic appeal naturally becomes a clause inherent within African worldviews.⁵⁸ It is well worth affirming that the wisdom of wholism is being made bare anew, encoded within physics equations in search of a unified field theory.

[As theoretical physicists] our sense of aesthetics really is a valuable tool in guiding us to finding theories that are effectively accurate descriptions of nature. So when you see something pretty, it's not just that it's pretty, [but] more often than not, something that's pretty is often right.⁵⁹

Righteousness of mind and behavior in a contemporary world numbed by anti-African/anti-Black racism still bends to the universal laws of energy, symmetry and aesthetics. And though we may not spontaneously stop bullets with our eyes or deactivate biological weapons like Ebola and AIDS with song,⁶⁰ dance, or cultural cloths, we may, with conscious and concerted emanation of creative energy disarm the very mental apparatuses that function to create and employ systems for destruction. Jamaican scholar and dance choreographer Rex Nettleford articulated the power of our creative energy and manifested aesthetic in times of struggle, hence:

The anguish of renewal and reshaping draws heavily on the resources of imagination and creative intellect—gifts of grace which as part of the irony of a subjugated existence served the subordinated people well. The ingenious stratagems of imagination and intellect that allowed the slaves or the colonized people to outwit the oppressive master bear eloquent testimony to this anguished past...many rebellions, both individual and collective, have been lost or won through the exercise of a fecund imagination and the application of a lively intelligence. Such rebellions continue to this day, not necessarily by means of a gun but often through the resourcefulness of [creativity]...By its very nature the creative imagination lies beyond the reach of the vilest oppressor—whether it be person or system and no matter how great the advantage of armaments, instruments of torture, or devices that affect psychological disorientation.⁶¹

History has shown that our greatest assets by necessity of human evolution have been our intuition and consciousness, not a propensity toward militarism. Rather than to abuse science as a means of death and destruction, supersymmetry can instead be used to demonstrate how to continue living and developing. Quite perfectly, Welsh-Asante instructed us to define African aesthetics as “a science of perception.”⁶² Accordingly, we may re-appropriate Robert Farris Thompson’s words for the purposes of winning in the struggle to say that anyone surprised by the power of Black people to captivate the senses and wield the energetic forces by science of perception are admitting to “an inadequate understanding of the aesthetic history of the [African]”.⁶³

The aesthetic properties housing the codes that demonstrate the operations of the natural forces also informs our embodiment of victory over racism and other forms of oppression. That is, we being parts of nature have the power to operationalize aesthetic power as we work against racism and oppression toward liberty on a daily basis. One African aesthetic in particular, *the cool*, articulated best by Thompson, has raised the level of discourse around the positive force of expressive style in human perception.

And in general, African people are capable of embodying the inner aesthetics that mark the balance as “heir to an aesthetic of the cool”.⁶⁴ While he referred to African people’s ability to “sing a sad song happy” as an example of the cool, African American poet Laureate Leonard Slade, Jr. recited “sweet songs of sorrow” composed by and for the souls of Black people whose blood has been used to write histories in defining the very meaning of being during and following European enslavement.⁶⁵ The ability to remain “cool” during both peace and war times has undoubtedly carried African people through every era.

Our cool functions as both a discursive and methodical weapon to help maintain our composure and social stability, and in effect increase our capacities to live authentically through the cycles of time because of what it energetically communicates to others—no matter what happens, we will be here, and *we gone be alright*.⁶⁶ Thompson explains,

[The cool philosophy is both] a strong intellectual attitude [and] an all-important mediating process...a matrix from which stem ideas about being generous, clear, percussively patterned, harmonized with others, balanced, finished, socially perfected, worthy of destiny.⁶⁷

All of us have seen the cool in discursive and methodical action. The classic scene in Spike Lee’s *Malcolm X* depicting a dignity-clad Denzel Washington as Malcolm X methodically leading a community of oppression-proof African Americans past police attempting to obstruct their *supervision* of a recently brutalized brother springs from memory.⁶⁸ So too does a scene in Chadwick’s *Mandela* as Idris Elba,⁶⁹ depicting Rolihlahla Nelson Mandela rejects release from political imprisonment on the grounds that colonialist de Klerk would assert that he, de Klerk, “gave” Mandela his freedom, as if it were not his will and energy along with his peoples’ that manifested his destiny.⁷⁰ Though Malcolm X’s body was assassinated by the forces of racism in 1965, and Nelson Mandela’s body was imprisoned for 27 years, neither were taken without stirring massive waves of civility in the Universe, and liberation inspiration in the community.⁷¹ At our best, our aesthetics—movement, speech, music, dress, and personality—coalesce to demonstrate beautiful and powerful energetic force. To this, the forces of the Universe gravitate in collusion to fight against oppressive people and conditions intending to control our destiny.

What Gates is mathematically designing via colorful, multidimensional geometric tesseracts, we have known personally in the rhythm of our walk, the expression of blessed assurance on our faces, hint of humor in our voices, and dandy in our dress,⁷² because we sense that there is more to our experiences than worldly living. We have known it also by our self-respecting greeting and treatment of each other in personal passing, because we know that we are connected.⁷³ As well, we have known physics through our invocation and incarnation of common ancestors like the Shabazz and Mandela families to whom our liberation and peace on Earth is worth living and fighting for, and through whom our continuation is cross-sectioned.

In many ways, Gates is showing this to be true. Hence, he explained, “write equations in the service of accurately describing nature.”⁸² Consequently, we who find ourselves struggling against obstructive energy that takes root in society through racism and other forms of brutality must be using those same equations to correct what is anti-nature and anti-us.⁸³ While each of us are but lightweights in comparison to the size of a planet or burst of an atomic bomb, all of us combined and throughout generations amount to seismic changes in the energetic composition of the world and Universe we live in. Who we perceive ourselves to be and how we personify that definition serves to both impact our present experience and dictate the coming cycles of life by natural law. As we cycle through this time, we must determine to transform our circumstances into functional energy that replenishes our spirits and communities for regeneration.

With each succeeding moment we are collectively remembering that the struggle is directed by an agenda without a schedule, marked not by time or death toll but by forces. Therefore, we must be diametrically opposed to the energies driving the oppressive conditions we face.⁸⁴ Nothing from our hair styles to our choice of food and friends or our mode and time of mourning or worshiping is absolved from functional equation modeling until the struggle is won. The wisdom and understanding of ☰ and ☷ is why Ablade Glover could describe the contemporary African orientation on the whole as the ability to express ourselves and our collective struggle through all tools, even “alien materials” introduced from imperialists as long as the celebration of our cultures and the extension of our existence is the outcome;⁸⁵ ✂. And inasmuch, proper aesthetics for African people is versatile and without uniformity, we only need to *sense* the mathematics embodied in them to know if it is functional for us.

Conclusion

The importance of chronicling Sylvester James Gates, Jr. does not lay in any unordinary intelligence as an African man, but in his degree of self-actualization in a racist and oppressive society. That is, the depths of his intellect is not what surprises us, but the fact that he has achieved in social status and position according to his intelligence as a Black man in America, knowing how hard the struggle is for so many of us makes his success notable.

If the ultimate measure of a man is as the common ancestor, Martin Luther King, Jr. defines, “not where he stands in moments of comfort and convenience, but where he stands at times of challenge and controversy”,⁸⁶ then we may say that Professor Gates extends the length of all the universes for his determination to emit waves of knowledge and harmony into a world too often set on the hatred, destruction, and/or erasure of African people through his understanding of physics. We learn from him that the struggle of light over darkness has an order that connects directly to the heirs of African intelligence and tradition. With this alone, he has proven his weight in particles as a man destined to greatness and immortality.

While he credits the idea to name his recent formulation of equation models after Akan *Adinkra* to a colleague,⁸⁷ it has been his intellectual and energetic capacities that have made the appreciation and dissemination of mathematical *Adinkras* possible. For the connection of African aesthetical proverbs to aesthetics of physics, by an African American man who lived through the first period of Jim Crow,⁸⁸ African people everywhere stand to experience renewed vigor for living past current and future struggles. With our determination to live on come opportunities to support and honor our families mourning the flight or imprisonment of a son or daughter through full embodiment of dignity and purpose in line with our classical conceptions of tragedy, as experiences within a continuous cycle.⁸⁹ Perhaps one day we will be able to scientifically isolate the genetic coding of supremacist orientations to rid the multiplex of genocidal dogma and diseases of hate like racism, religious intolerance, sexism, and homophobia through diametric forces that will instead help develop our communities. Until then, African aesthetics like the cool combined with the people's collective will to live with respect toward the divine "god" force throughout nature provides perhaps the best keys to our victory.⁹⁰ ©

¹ Joe McMaster, "Viewpoints on String Theory: Jim Gates," *The Elegant Universe*, July 2003, accessed May 5, 2015, <http://www.pbs.org/wgbh/nova/elegant/view-gates.html>.

² S.J. Gates, M.T. Grisaru, M. Roček, & W. Siegel, *Superspace: Or One Thousand and One Lessons in Supersymmetry* (Massachusetts: Benjamin/Cummings Publishing Co., 1983), 1.

³ Scott Williams, "Physicists of the African Diaspora: Sylvester James Gates," 2008, accessed June 8, 2015, http://www.math.buffalo.edu/mad/physics/gates_sylvester.html.

⁴ Ibid.

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