Yeats and the Mask of Science

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Abstract
This paper views science through the prism of the Yeatsian mask, that is, as an appropriation of willed creativity through the dynamics of opposition. It uses Jean Francois Lyotard’s philosophy of changing episteme in the twentieth century to provide for an understanding of science and art as inter-penetrative. It considers the Yeatsian conception of universal realities as explicated in A Vision (1925, 1937) and as further expressed through his poetry as representative of this era of changing knowledge.

Keywords: William Butler Yeats, literature – modernism, literature – post-modernisme, art

This essay will trace the confluence between new scientific worldviews from the early twentieth century and the poetry and philosophy of W. B. Yeats. Roy Foster notes Yeats’s “special interest in time-space relations derived from what he knew of Einstein”, and this essay will explore Yeats’s work in both A Vision (1925, 1937) and his poetry in relation to the concepts of time relativity and wave-particle duality. In this way, Yeats’s poetry and philosophy can be viewed as a response to the era through which he lived, and science itself may be viewed as a form of creative mask for Yeats, a mode by which creativity is engendered through the inter-penetration with conceptual otherness. Science from the twentieth century on tells us that otherness is intrinsic to our understanding of reality and Jean-Francois Lyotard describes this change in the condition of knowledge in The

Postmodern Condition: A Report on Knowledge (1976). For Lyotard, an “incredulity toward metanarratives” is the very definition of the post-modern and notably emerges from science:

I define postmodern as incredulity toward metanarratives. This incredulity is undoubtedly a product of the progress in the sciences: but that progress then presupposes it… Thus the society of the future falls less within the province of a Newtonian anthropology (such as Structuralism or systems theory) than a pragmatics of language particles.

What Lyotard illustrates in *The Postmodern Condition* is that knowledge is a form of productive discourse and the modern and postmodern eras of knowledge are both one and the same; that each is a part of the other and therefore, postmodernism is not a result of modernism, but rather a formative part of that era itself at its inception. “A work can become modern only if it is first postmodern. Postmodernism thus understood is not modernism at its end but in the nascent state and this state is constant.” Lyotard views the modern itself as the representation of the unrepresentable: the allusion to the sublime through form. For Lyotard, literature is an exemplar of this destabilising cultural trope and he argues that in aspiring to promote form itself in the modern era, writers are in fact destabilizing its essential structure in their appeal to “an aesthetic of the sublime.” Thus, what is modern is in fact an alternative to the real, some kind of visionary otherness or mask which emanates from human consciousness and is expressed through art only in the paradoxical connection to what it is not.

As Lyotard has noted, this concept extends to scientific knowledge in the twentieth and twenty-first centuries which is produced from the conceptual and imaginative mind of mankind and in this way, has become an art form in the present age as the physicist Werner Heisenberg writes:

The spirit of a time is probably a fact as objective as any fact in natural science and this spirit brings out certain features of the world which are even independent of time, are in this sense eternal. The artist tries by his work to make these features understandable, and in this attempt he is led to the forms of the style in which he works. Therefore, the two processes, that of science and that of art, are not very different. Both science and art form in the course of the centuries a human language by which we can speak about the more remote parts of reality and the coherent sets of

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3. Ibid., p. 130.

4. Ibid., p. 80.
concepts as well as the different styles of art are different words or groups of words in this language\(^5\).

Science and art, then, are a means of exploring the zeitgeist of an era’s episteme and these two separate paradigms of knowledge form their own philosophic gyre in time that produces conceptual references that can transform scientific theories of knowledge into a new aesthetic, a form of poetry. In essence, science and art become each other’s mask: a method by which knowledge is negotiated and explained through the paradox of doubleness.

Duality now lies at the heart of science. It was Max Planck who in 1900 famously discovered the essentially dual nature of all matter or quanta and this discovery in turn, gave rise to quantum physical theory\(^6\). His scientific breakthrough that all light appeared in a wave formation, yet also consisted of packets of individual quantized energy, was termed ‘wave-particle duality’. This energy is emitted in a bullet-like fashion and at a constant rate. Thus, the mathematical law of Planck’s constant is conceived as the universal constant that all quantum mechanics adheres to. However, this seeming certainty belied the duality at the core of his discovery: quanta behave both as individual particles and as waves, a phenomenon known as ‘complementarity’. In the 1920s, this theory was extended to encompass all sub-atomic matter and the forces that act upon it and was called quantum mechanics. Paradoxically, the more information physicists acquired about quantum mechanics, the greater was the mystery that emerged. The motion of quantum particles cannot be visualised as in Newtonian physics, nor can it be determined. Matter at this essential level is unpredictable and indeed, unobservable.

This theory [quantum mechanics] is able to provide a successful explanation of the paradoxical nature of light, atoms, and much else besides. But there is a price to pay for this success. We must abandon all hope of being able to describe the motion of things at atomic scales in terms of everyday concepts like waves or particles. A “photon” does not behave like anything anyone has ever seen\(^7\).

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6. Max Planck’s solution to the problem of radiation from hot bodies was the first introduction of quantum ideas. Planck discovered that the energy of a photon (a particle of light) depends on its frequency. This constant of proportionality is called Planck’s constant. He was awarded the Nobel prize in 1918 for this scientific breakthrough. Heisenberg derived the Uncertainty principle from Planck’s equation which uses proportionality to establish uncertainty thus: (Uncertainty in position) × (Uncertainty in momentum) is approximately equal to (Planck’s constant), Tony Hey and P. Walters, *The New Quantum Universe*, Cambridge, Cambridge University Press, 2003, p. 20-23.
A Vision (1925, 1937) sets out W. B. Yeats's own understanding of universal realities. In the introduction to A Vision (1937), Yeats describes his philosophy as a modern construct that provides for “a system that stands out clearly in my imagination, I regard [the gyres] as stylistic arrangements of experience comparable to the cubes in the drawings of Wyndham Lewis and to the ovoids in the sculpture of Brancusi. They have helped me to hold in a single thought reality and justice.” Thus, the 1937 edition of A Vision contains aporia, or an irresolvable contradiction of duality and inter-penetration within itself. In this way, Yeats’s mature philosophic vision can be understood as a response to the era of modernism in which he lived in the 1920s and 30s, an era which was itself an expression of aporia: a reflexive time of internal contradiction whereby art and culture, form and content were struggling to revise and reform grand narratives out of the detritus of the post-war, post-Enlightenment age. Yeats’s philosophic vision was initially produced through a duality of thought: the subconscious mind of George Yeats and the conscious rendering of those thoughts in a philosophical work by her husband, W. B. Yeats. In this way, they function as a process of doubling, that is, a form of absence as presence as George Yeats vacates her conscious mind to the occult instructors who present themselves to the mind of Yeats himself. In the Vision papers, George Yeats quotes W. B. Yeats directly on this process of mediumship: “She finds the words, we send the wave & she as it were catches it in a box.” On joining the Order of the Golden Dawn, George Yeats chose the magical name “Nemo Sciat” which translates from the Latin to read “let no one know.” The name comes from the motto that George decided best represented the essence of her personal myth. Her chosen name expresses the essential duality that is both presence and absence and indeed, she became both anonymous and yet named in the joint project with her husband, A Vision, which has George Yeats as its essential source but W. B. Yeats as its named author. Margaret Mills Harper writes: “The motto certainly suggests anonymity, but it is important to notice that to be Nemo is not to be nameless. It is to be named nameless […]” Yeats’s Vision papers, which record the automatic writing and “sleeps” of his wife George, consist of three thousand six hundred pages from four hundred and fifty sittings over twenty months. The writing began on October 24th 1917, four days after their marriage and its collaborative nature solidified their marital union. George Yeats called it the “Wisdom of Two” in a notebook.

11. Ibid., p. 104.
12. Ibid., p. 107.
entry and critics such as Harper have sought to recover George's creative voice in the making of W.B. Yeats's own philosophy. Harper writes: “It is vital to recognise that the veils that hang around the Yeatses' years of automatic writing, complementary dreaming, compilation of material, and composition of the two versions of the book A Vision are as much a part of the matter as what lies behind them. The act of hiding in other words, is as significant as what is hidden or misconstrued." This coalesces with Lyotard's conception of postmodern knowledge as an ambiguous and unintelligible form of 'reality' which emerges through the machinations of the human mind: “The emphasis can be placed, rather, on the power of the faculty to conceive, on its ‘inhumanity’ so to speak, since it is not the business of our understanding whether or not human sensibility or imagination can match what it conceives.”

This dichotomy of abstract and hidden knowledge and material reality is investigated by Yeats in the lyric “The Cat and the Moon”. In the poem, the cat named Minnaloushe, performs the universal dance of interactive matter; absorbing the changing crescents of the moon and, in turn, changing the light of the moon itself.

Do you dance, Minnaloushe, do you dance?
When two close kindred meet,
What better than call a dance?
Maybe the moon may learn,
Tired of that courtly fashion,
A new dance turn. (“The Cat and the Moon” 11-16).

Minnaloushe's dance echoes the formation of quantum theory born out of the struggle between light waves and particle matter and, likewise, Minnaloushe embodies the change he instigates in his feline dance. However, the question of embodied truth versus a conscious understanding of that truth remain a mystery to the poet, just as they do for the physicist Ernst Schrodinger in his own famous cat analogy.

15. Max Planck's solution to the problem of radiation from hot bodies was the first introduction of quantum dualities. He discovered that the energy of a photon (a particle of light) depends on its frequency. This constant of proportionality is called Planck's constant. Werner Heisenberg derived the Uncertainty Principle from Planck's equation which uses proportionality to establish uncertainty thus: (uncertainty in position) x (uncertainty in momentum) is approximately equal to Planck's constant. Heisenberg introduces therefore the role of observation into the construction or "body" of matter. Tony Hey and P. Walters, *The New Quantum Universe*, Cambridge, Cambridge University Press, 2003, p. 20-23.
16. Ernest Schrodinger uses the analogy of a cat in a box that is neither alive nor dead to illustrate the concept of
Does Minnaloushe know that his pupils
Will pass from change to change,
And that from round to crescent,
From crescent to round they range? (21-24)

Yet, the final lines of the poem equate embodied knowledge to wisdom for
the poet. Minnaloushe’s eyes reflect the changing moon back to itself and the cat
now embodies lunar wisdom even if he is not fully aware of its significance. He is
transformed by the process that gives him knowledge, the cycles of time as reflec-
ted in the light of the ever-changing moon.

Minnaloushe creeps through the grass
Alone, important and wise,
And lifts to the changing moon
His changing eyes. (25-28)

Knowledge, then, is understood as a form of embodiment and we can likewise
consider scientific knowledge as inter-penetrative, that is, as a meta-narrative
which comes to us through the traditions of the Enlightenment age and that has
now become subject to the interrogation of its veracity through the ingestion of
the postmodern into its own “body” of thought. Lyotard illustrates this deconstruc-
tive process in his own writing with his use of scientific metaphor to illus-
trate the breakup of meta-narratives: “The disintegration of social aggregates into
a mass of individual atoms thrown into the absurdity of Brownian motion."
The instability of meta-narratives in the modern era was recognised by writers
in the twentieth century, and Daniel Albright in *Quantum Poetics: Yeats, Pound,
Eliot, and the Science of Modernism* (1997) uses the narrative of science to further
explore the writing of this time. Albright writes that “Quantum poetics is itself a
great modernist poem.” He views the breakdown between origin and the text as
an example of wave-particle duality and in this way, Albright’s analysis demons-
strates the reflexive nature of modernism and postmodernism with the narrative of
science becoming an art form in itself which acts as a wave of knowledge which
washes up a cultural tide of artistic particles it likewise co-creates. Albright uses
the narrative of science as an innovative approach to reading literature and espe-
cially poetry throughout this era. He notes that Yeats’s work in *A Vision* is an
“embodiment” of this cultural epoch:

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quantum super positional states that have yet to decohere into matter. Werner Heisenberg, *Physics and Philoso-

Massumi, Minneapolis, University of Minnesota Press, 1984, p. 15.

Such books as Yeats’s *Vision* (1925, 1937) and Stuart Gilbert’s *James Joyce’s Ulysses* (1930)… attempt to encompass and specify the whole zodiac of literary process, from the generation of pre-verbal images in the heaven in the heaven of the imagination, to their embodiment in the text, to their reception and interpretation by the reader. These books are not ancillary to modernist literature, but important parts of its achievement.

*A Vision* (1937), in its remoulding through the 1920s and 30s is an exemplar of the writer’s response to the transformative modernist age: an artistic construction which harnesses the chaotic gyres of experiential change to give authority to its author as narrator. Yeats, who believed that truth was embodied in experiential life, characteristically embraced the essential antinomies of the gyres in his own work and this deconstructive tendency is shown in the self-constructed edifice of knowledge that is the finished version of *A Vision* (1937): “Man can embody the truth, but he cannot find it.” When viewed in this way, *A Vision* (1925, 1937) becomes not just a modern text but also a postmodern one with two different versions of the book providing the revealing knowledge as something which persists through time and is likewise changed by this generative process into new forms of narration and indeed, in the terms of Lyotard and Harper, new forms of authority: “Moreover, and crucially, WBY accrues power to himself by setting the wheels in motion formally and intellectually. He is again the mage, the knower, and even the mover of those gyres.”

For the poet Yeats, as for theoretical physics, the acceptance of the limits of our knowledge of the universe is wisdom enough; it is the limit that paradoxically points the way forward. For Lyotard, this unknown limit allows for a form of freedom for artists whereby what is imagined becomes a form of doubling in timely relativity, that is, the interpenetration of past and present allows for the past to be re-inscribed by what he terms the paradox of the “future anterior.”

The artist and the writer, then, are working without rules in order to formulate the rules of what will have been done. Hence, the fact the work and the text have the characters of an event; hence also, they always come too late for their author, or what amounts to the same thing, their being

put into work the future (post) anterior (modo), their realisation always begins too soon. Postmodern would have to be understood according to the paradox of the future (post) anterior (modo)\textsuperscript{23}.

Richard Finneran in his analysis of the manuscript drafts for *The Tower* (1928) notes how Yeats’s rewriting of *A Vision* (1925) was reflected in his subsequent revision of poems within this volume of poetry: “Inevitably, when Yeats completed the second edition of *A Vision* in 1937, he took the opportunity of publishing further revisions to the poems\textsuperscript{24}…” However, Finneran also observes the creative dynamic between this philosophical structure which grounds *The Tower* (1928) and “horrors of the present” which generate the poetry: “Rooted in the horrors of the present, these and indeed all of the poems in *The Tower* show the impact of George Yeats’s automatic script and the couple’s subsequent research that resulted in the philosophical structure underlying *A Vision*\textsuperscript{25}.” *The Tower*, then, becomes a process of artistic form over chaos produced by an act of willed creation by the poet Yeats. In this way, it can be allied to Lyotard’s conception of the paradoxical future anterior whereby what is to be created emerges through the past in a willed form of art through reflexive time. Yeats wrote to T. Sturge Moore of the tower at Ballylee: “I like to think of that building as a permanent symbol of my work plainly visible to the passerby\textsuperscript{26}.” The tower at Ballylee is thus appropriated by the poet from the historical past into the poet’s own artistic future. In a letter considering how T. Sturge Moore should design the frontispiece of the volume, Yeats stipulates the formal symbolism of its tower form – “It is a most impressive building and what I want is an imaginative impression. Do what you like with cloud and bird, day and night but leave the great walls as they are\textsuperscript{27}.” Therefore, in order to co-create his reality within the flux of past and future experience, Yeats must paradoxically transcend generational process and conceive his own vision from the panoptic view on top of his literal and metaphorical tower; a tower built by the historical past but reconstructed in the mind and life of the poet in his own time. Likewise, *A Vision* and its artistic expression within *The Tower* (1928) exist as a form of mimetic interchange between art and life in time. The irony remains however, that the excitement of natural life is reproduced in exquisite but timeless imagery. Helen Vendler notes that “A poem, at least in the Yeatsian uni-


\textsuperscript{25} Ibid., p. xxxvi.


\textsuperscript{27} Ibid., p. 109.
verse – is a set of symbolic abstractions which become verbal equivalents of a mental construct. Thus, Vendler views this poetry as a reflection of the mind of the poet Yeats but that creative mind is itself attached to the eventuality of the volume that is The Tower in time.

Conversely, the future which is determined by the eventual past, remains a future unknown, a vision, which yet informs the present moment that is always becoming what it is not: the past. In this vein, human imaginative power or vision is driving the new world of postmodern physics. This new science relies profoundly on the imaginative powers of the physicists who study it. It is a virtual world of mathematically derived “truths” that can only be accessed through the Byzantine mind’s eye. The physicist Richard Feynman questions this form of knowledge which emerges through the future anterior of imaginative mind:

I don’t like that they’re not calculating anything. I don’t like that they don’t check their ideas. I don’t like that for anything that disagrees with an experiment, they cook up an explanation – a fix-up to say “Well, it still might be true.”

W. B. Yeats’s poem “Byzantium” conveys the impact on human imagination of sublime and otherworldly possibilities. As Daniel Albright writes: “Yeats’s ‘Byzantium’ pushes speech to its limit in order to point to the unspeakable.” Yeats confronts an inhuman world in this poem that he calls “death-in-life and life-in-death”, but it is a world that has emerged through the human capacity for imaginative force. It is human imagination that allows us to transcend our facticity and reach for other worlds and Yeats in this poem links artistic creation to the future anterior in his use of the era of Byzantine power. Helen Vendler observes this focus on imaginative possibility in “Byzantium” thus:

It is the mind, not the body, that moves in the single station of “Byzantium”: we live within the categories of that mind as it takes the measure of its present and future state... It is only with an effort that we can try to undo in our mind all that the Yeatsian imagination has summoned forth.

Vendler’s reading can be interpreted as a postmodern form of knowledge which pervades other imaginations in and through time as future anterior. Yeats demonstrates this thesis in his use of the ancient city of Byzantium to reconfigure

his own mindset, and that mind too is focused on an alternative world: a glorious afterlife of the future. “Byzantium”, then, can be viewed as a quest for unity amidst the antinomies of existence, a unity that does not exist except perhaps in the perfection of human imagination born of mask. The thirteenth cone or sphere, which represents oneness in the Yeatsian system, is unknowable to the human mind; all is encompassed within this sphere, which itself is born of imagination yet lies outside it and “has but a symbolical relation to spaceless reality”.

The poem itself is transfigured into an aesthetic artefact of formal beauty. “Byzantium” maintains its eight-line configuration through all eight stanzas and each penultimate and antepenultimate line is only three, four or five words long at a maximum emphasizing the distinct aesthetic pattern and rhythm of this poem as a whole: its beautiful form. “Byzantium”, as a work of poetry also performs a productive chiastic threesome; it transcends the limitations of form in speaking to the pitiful state of humanity while pointing to its own essential aesthetic beauty, yet the poem returns at its end to the final image of the chaotic creative sea that is general humanity. In fact, it is this sea that appears necessary to conduct the sound of the booming gong of Byzantium’s great bell. In this way, the poem itself becomes transfigured into a “golden bird” that “scorns aloud” the piteous human condition. The final two stanzas describe the arrival of the souls of the dead which flood onto the marbled mosaic floor of Byzantium. They will be purged of human complexities in the holy fire. However, the poet once more plays with the notion of linear time as this spiritual purgation occurs in the penultimate stanza, with the earlier arrival of the spirits occurring in the final stanza. In moving the expected form of narration, Yeats places the creativity of human imagination at the nucleus of this multi-dimensional vision and leaves the reader with a final image of heaving waves of humanity which supercede the magnificent flames of the afterlife. The beautiful irony remains: Byzantium itself surfaces from within that imaginative human sea that breaks over it in a sequence of waves.

Astraddle on the dolphin’s mire and blood,
Spirit after spirit! The smithies break the flood,
The golden smithies of the Emperor!
Marbles of the dancing floor
Break bitter furies of complexity,
Those images that yet
Fresh images beget,
That dolphin-torn, that gong-tormented sea. (33-60)

Yeats's own poetic “Byzantium” emerged through his interaction with complex and abstract principles born of imaginative mystery and published in *A Vision* (1925, 1937). This work was to become a vital force-field of creative energy for his later poetry. Yeats intuited possible links between his own inscrutable theory of the universe and modern relativistic science. “All things are a single form which has divided and multiplied in time and space. Will some mathematician some day question and understand as I cannot and confirm all, or have I also dealt in myth?” Yeats engaged with the narrative and progress of the scientific knowledge of his era and in a letter to Olivia Shakespear in 1933, he refers to historical process in the scientific terms of Einstein’s spacetime: “I talked the ‘historical dialectic’, spoke of it as moving itself by events as the curvature of space was proved (after mathematics worked it out) by observation during an eclipse.” Here Yeats allies the dynamic curvature of space to the process of historical time. Yeats understood the scientific discovery that states that it is events themselves that produce the human notion of spacetime and so, history itself, which does not objectively exist except as what Lyotard names a “future anterior”. Thus, it is universal action which enables universal “progress” and likewise human action or poiesis that engenders life. Yeats’s poetry embodies this philosophy of being; his art tunnels through time from the Romantic era of his youth through to the postmodern virtual world of indeterminate relativity. He has exceeded the atomic creative energy of Modernism and jumped to the quantum poetics of sub-atomic postmodern flux. Yeats’s point particle position remains difficult to pin down exactly, and his poetry celebrates the multidimensional capability of generative mask. Conversely, it seems to me that the closer we come to defining Yeats the further we move from actually understanding him. He purposely avoids such atomistic definition and his underlying philosophy as written in *A Vision* (1925, 1937) baffles people with its occult mystery. In this way, Yeats’s “vision” becomes a “quantum vision” of ever moving multiplicity and a rendition of that plurality in life giving art. Yeats notably ends both versions of *A Vision* with the poem “All Soul’s Night”, a poem which speaks to the ghostly illimitability of texts in time. This poem of otherness and mystery stands as an “eventual” epilogue to the

36. “On May 29th 1919 Einstein’s General Theory of Relativity (1915) was tested using the opportunity of a solar eclipse. Sir Frank Dyson of the Greenwich Observatory along with Sir Arthur Eddington observed the angle of starlight signals which hit the sun to see if such angles correlated to this new theory of gravity. Triumphanty, on November 6th 1919 it was announced in London, after careful analysis of the photos for five months, that Einstein’s prediction based on General Relativity was proved correct.” Brian Greene, *The Elegant Universe*, London, Vintage, 2000, p. 77.
text of *A Vision*, a future anterior which uses the ghosts of the past to inform the future yet to come.

A ghost may come;  
For it is a ghost's right,  
Being sharpened by his death,  
To drink from the wine-breath  
While our gross palates drink from the whole wine.  
“All Soul’s Night” in Epilogue to *A Vision* (5-10).