Best of all Possible Worlds?

VICTOR PETERSON II

Abstract: The following details the importance of modality when analyzing the articulation of our state of affairs and provides an argument against pessimism. Our endeavor's argument follows from a renewed consideration of Leibniz's logical consideration of ours being the best of all possible worlds. In so doing, the essay utilizes an updated analysis of the modal construction of alternative states of affairs.

Keywords: pessimism, optimism, melancholia, articulation

> Man is equally incapable of seeing the nothingness from which he emerges and the infinity in which he is engulfed.
>
> – Blaise Pascal

Is this the best of all possible worlds? Answers seemingly invoke conservatism, pessimism, melancholia, or optimism. Arguments ranging from Leibniz in the affirmative to Fred Moten's assertion that it's not, but it's the only one we have in *Black Ops*, to Achille Mbembe's or Paul Gilroy's analyses of melancholia owing to optimism's failure. (see Gilroy, Mbembe;, and Moten 1743–1747) Our inquiry is one of modality. What would *necessarily* have to be the case in order to make the determination that this *is* the best possible world? I will make the case that despite distinctions between optimism and pessimism, talk of a perfect world, one necessarily so and, therefore, universal, should be forgone. By bracketing these arguments, we recognize the creative means by which what is apparent is put to use in different ways. Optimism and pessimism are revealed as subcomponents of a composite function whose output are differently labeled given the conditions in which that function is applied. And yet, those output obtain a functional-equivalence across the states of affairs articulating a world-image in ways relevant, yet unforeseen, in the domains where those practices are cultivated. Consequently, our functional reorientation claims that the world articulated would be meaningful to those inhabiting it with no need to appeal to a non-worldly world to organize its affairs.

Consider the traditionalist argument. If the world is created from perfection then nothing imperfect follows from it. Perfection may give rise to an appeal outside of the world to which we have access, and in going this route, that appeal's inevitable. That primary cause becomes necessary and sufficient for creation, that necessity making it the case that this assumption holds in every possible successor from that cause. A world created from these conditions must, in principle, also be perfect. Yet this world would be a subset of those initial conditions. It follows that the inhabitants of these conditions would, by necessity, also be perfect; their horizon of possibility making the relations obtaining between them a subset of those secondary conditions. However, this possibility leads to a regress, for by necessity these inhabitants would have to at least be equal to their priors to maintain perfection but, by definition, they cannot be greater than their primary cause. A subset of a subset of causal conditions, this world's inhabitants mark a point of corrosion in the well ordering of this system. If greater than their cause, then those initial conditions would be a proper subset of themselves, an infinite regress by definition; if equal to, then their cause is indeterminate; and if less, those inhabitants do not have access to the primary cause with which they substantiate their determination of perfection. It appears that they would only have access to the conditions following their instantiation.

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Etymologically, pessimism sets in at this point of corrosion, inducing a reaction of optimistic reclamation of what's been lost or for another world. If traditionalism proves an infinite regress, utopia seems to recede as a melancholic operation to construct a world in which perfection obtains and converges towards the limit outlined above. The content of the operation expressing melancholia and the function of finding utopia, classically defined as the no place, do not converge towards some world-thing, and as such are equivalent prior to assertion. This functional-equivalence is interesting as a function is an abstract object in which some aspect of a domain and another of a subdomain, forming a pair that are an element of that function, entails that if the same aspect from that domain pairs with one from a subdomain and another from different subdomain, then those subdomains' aspects are functionally-equivalent. As in Edouard Glissant said in *Poetics of Relation*, from the view of the domain of projection, one aspect represents the reverse image of the other prior to their projection in the contexts in which we attempt to see if that concept, once decoded in terms relevant to that domain, are said to play a role in explaining a relationship between the world-view previously encoded by that function. A relation between aspects of the world, not what's in it.

The optimism-pessimism, utopia-melancholia, connection is as old as Aristotle's *Problema.* These world-related states induce a cycle in which, determined from terms indexing the present world-view, their use enforces a self-fulfilling state, solidifying one's world membership to which they only have access through those terms. Collapse of a view's certainty—see cynicism-absolutism below—evinces a desire for what may have never been. (Gilroy 6) If only knowable as a function of what is known, the perfection of first causes would be unrecognizable to those subjected to it. Perfection is, by definition, incomparable to the world we have to compare it to.

How so? Consider optimism is based upon a vision of utopia and a pessimism producing melancholia from utopia's inaccessibility. This process can be defined through functional composition. Treating poetic relation seriously, poetic composition occurs when the output of one operation becomes input for another, relating those operations by way of an image of those now composite conditions, licensing those operations in the first place. There is a set of features indexing a "world" in which either the function of pessimism, whose output, melancholia, is reproduced in the conditions that follow; or optimism, whose output, utopia, is reproduced. In a possible world-successor, melancholia obtains; in another successor, the converse is true. Thus, melancholia is not-utopia and utopia is not-melancholia. If necessity entails that one position obtains in every possible world following some initial conditions, then consider a universal statement regarding all possible worlds. This can only be stipulated externally to that world as no world is greater than the n^{th} world-successor, thus making that determination equivalent to the operation enumerating possible worlds.

From the position at which that determination is possible, we would need to say that those initial conditions are characterized as the best possible world and, for all worlds, if this is the best then so is its successor, therefore all the possible worlds following that instantiation are the best. The best world being our constant, and a function indexing that constant the means of articulating a best-successor, in order to determine this notion for the whole series we would have to say that the functional-content of that determination for the n^{th} world is determined by the n^{th} function of that n^{th} world's successor. This operation can be formalized but not computed. From a stance in the future, both utopia and melancholia could both be true until instantiated. If one instantiation leads to the other, from that future stance it's possible that both could be true although contradictory now. So from outside the system, since melancholia is not utopia and utopia not melancholia, they are functionally-equivalent if evaluated at no one world in particular, equivalent to any one world before we determine the world we occupy. Indistinguishable from the stance of a future in which we could make a determination regarding prior instantiations, each seems futile.

As "best world"-related operations, optimism and pessimism are considered the functional-content of utopian and melancholic propositions. "We can represent a proposition by a set of possible worlds—the set of worlds in which the proposition is true. Equivalently, we can represent a proposition as a *function from possible worlds to truth values* . . . we can represent intensions of various kinds

as functions from possible worlds to extensions of various kinds. . . we can represent the intension [content] of a predicate [conditions-description] as a function from possible worlds [context indexed by that predicate] to the set of objects which falls under that predicate in the relevant possible world. Similarly, we can represent the intension of a singular term as a function from possible worlds to individuals. " (Taylor 201) Utopia and melancholia are state descriptions. The function of the object (=thought) they index *is* that object prior to that function's use. As predicates characterizing a state, these functions appear in the object position of our determinations regarding a possible world. (Graff Fara) Their functional-content—optimism and pessimism respectively—indexes their use to the conditions described by that determination. As the object of this characterization, they reference their conditions of application, not a thing in the world, although acting as constituting members of that world, as world concepts. We can conceive their operation as a means of articulating a world through their use, organizing our experience; as an emergent, palpable, quality of the world.

As a result, we find utopian arguments make for melancholia on the ground. So what prompts Fred Moten's argument that, "[t]his bitter earth is the best of all possible worlds. . ." A "fact" that brings in the modal thought-experiment below. This contention "necessitates" an "imaginative" and "open," therefore recursive operation, for Moten. For Gilroy, the onset of melancholia inevitably leads to cynicism (=absolutism) or nihilism, a moral determinism and onto-epistemological evacuation of the content of the world(s) we inhabit by way of our characterization of particular states of affairs. (see Mills and Silva) Thus, utopian arguments are seen as leading to modal collapse. If this world is the best world then it is necessarily the best world. We can formalize necessity by stating that this world is necessary if and only if for any determination of this world given that determination, so is that world. Consequently, we determine possibility as what's not-necessarily-not the case. As a result, what's not-possibly-not is equivalent to necessarily. Definitionally, we immediately see that if this world is necessarily the case, then either we can't determine this as the best world or this world is the best given our determination. Given no way to determine if it's the best possible world, there is no world to make that determination. Odd. Therein lies the possibility that we can make a determination that this is the best world and yet it would have no content. Our ability to determine it as such cannot arise. A determination is possible if and only if there is not a world such that if that determination's made, then we would find that that world and its antithesis arise.

But how would one be able to know that this is the best possible world without its complement? What is the consequence of necessitation? "If it's the case, then necessarily so," is equivalent to "if not necessarily so then not the case." This is equivalent to if possibly not the case then not the case, revealing an embedded possibility in that claim, a modal collapse. Necessitating a fact leads to many conundrums. Consider our recent discourse and dismay over alternative facts and right-wing conservatism.

It follows that necessity follows from possibility and what is possible is necessarily possible. (see Barcan-Marcus) A world is necessary only if for a universe (=world of worlds), that world is the case but that universe must be possible and is possible only if there isn't a world that contradicts itself when articulated. The universe comes first, but its members is a matter of articulation; if a contradiction arises, the possible world description is forgone, not the universe itself. If no world and its constitutive rules can be shown, then no claim about it is possible for that world is determined by the constitutive rules licensing the claims within and only within it.

A fiction has rules in which statements in it are true but untrue when violating those rules or taken outside the domain determined by that world. Consider, if a world is the case, then it is necessarily so given that world, thereby the world is possible and possible necessarily. But suppose it's possible that it doesn't exist, the claim would be vacuously true because nothing could be produced to contradict it, allowing anything to follow; or, by the necessity of possibility, it is necessarily possible that it doesn't exist, meaning it is not possible that it's not possible that it doesn't exist, it's not possible that it necessarily exists. But this contradicts our earlier determination, so it is not possible that that world is not the case and therefore it is necessary to have a world in order to make that possibly necessary determination.

The above raises a good question. If necessity is closely tied to universal quantification and as such can be vacuously true, is this so for possibility as well? Showing that universality can lead to statements like, "for all there exists," that presupposition translates into "there is not something that's not not for all that's not," i.e. there is nothing such that for all there's not. We make the argument that what is possible is necessarily so. How then do we answer whether possibility is vacuous?

Consider a space framed between two axes wherein we index a point (=position or location) in that space. We can consider this space prior to framing as composed of infinite possible points. Infinity here should not cause worry because as such we can properly define it without having to enumerate each point and each point is as yet occupied. The set of all possible points can be put into one to one correspondence with a proper subset of itself. Zero fits this definition and functionally can be considered an object of a domain. One to one correspondence can be defined through our definition of a function. An element of a domain and another of a sub/co-domain's pairing is an element of that function, an object determining a relation between domains. A selection from one domain composes a relationship to the other domain by way of a correspondence between their elements; selection of a marker from one axis paired with one from the other. As such, relations in one domain are said to be a reverse image prior to the projection of that function onto the same relationship in the other. That function represents the co-domain in the other, not as an element but as an encoded relationship between elements. Therefore, a function represents the zero of this composite relationship, i.e. what determines possible relationships between domains prior to composition.

To draw a line from one point to another maps a distance between them. Distance can also be called an "interval," a significant term in systems of space and time that will be useful below. Calculating this distance follows from triangulation, taking the root/"route" of the sum of the squared differences between two point's "coordinates." These distances can be determined up to however many coordinates we need, adding dimensions. If we were to add two more axes framing a three-dimensional space, then travel across that line would give us a change in distance with respect to a fourth axis. When these "lines" share a point, they outline shapes in that field. Triangles in two-dimensions, cones in three, space itself is shaped. Movement in two-dimensions gives the distance traveled; in three, an entity filling the outlined formation garners momentum (=spin); in four, its trajectory curves. Space, then, is shaped by the formations in it. The closer up, the more Euclidean a form appears; zoom out and we find that contours abound. A spherical space is defined by formations moving out from a central point in all directions along lines at different distances passing through that central region in all directions. For example, consider the pull-action on a Hoberman sphere toy with objects following lines within the sphere. Sets of distances within it can be considered as axes to define regions within that sphere. Forms are projected to the surface of the sphere at different rates. Measuring a distance on the projected surface of that space means that each coordinate difference is taken in relation to the maximum rate of change possible in that space in addition to an interval on a fourth that vanishes but is implied when considering a three-dimensional object. We can visualize the shape of the surface as well as formations within and sinking into that sphere. Consequently, formations in this space have spin, garner momentum, and collide, generating energy. Terms equally applicable to physical, socio-cultural, as well as political formations.

Space, then, is constituted internally as the distance achieved between coordinates moving in four-dimensions. Four-dimensions allows us to conceive of a universe with infinite interior and no exterior, bound yet open internally to different formations. If a region is considered exterior to the space, that very same region would have to be in sight of a formation within the sphere projected out to the surface, immediately making it part of a universe that is a proper subset of itself. Modal collapses stemming from universal necessity shows that there's room to consider that what can be constructed, in some sense, is necessarily possible. An elegant way to put the first and last lines of Asaph's 82nd psalm, this concept shows that infinity is not necessarily a thing in total, but a concept grasped by the function of its method of construction which, when decoded in terms relevant to the

model organizing phenomenal experience, is determinately real. (Gödel 12; Sobel 241-261). Consequently, our model can be and is used in physical terms.

Stuart Hall and Sylvia Wynter, methodologically and philosophically, intimate that encoding/decoding practices can be used via this model to study relations in the world. Shifts in relations in the model become the reverse image projected onto a region in this world of worlds, organizing experience, according to Glissant. Consider each coordinate indexing a feature of the world with distances across that manifold relating those features in such a way that they begin to outline the shape of some phenomenon. That "shape" encodes a concept that when projected is tested to see the extent to which those indexed relations apply, what that outline "captures." When projected in space and held in relation to others, that shape is decoded in terms relevant to others so that if that phenomenon appears in both frames, one can be said to experience that phenomenon in the world. The world then involves a phenomenal space into which our concepts (=encodings) are mapped, morphing internally as it is projected outward since this encoding/decoding capacity is the means through which we access the world, therefore placing us in it for these relations are abstracted from that world.

An argument put forward by David Lewis shows how many entities and their modes of expression are possible without having to count them all. Henry Louis Gates Jr. allows for the argument to be decoded and then reencoded in terms relevant to our discussion by considering axes as semantic and rhetorical, mapping modes of expression to modalities of inhabiting the space framed by those axes. Considering all points in four-dimensions implies a set of points by which any determination would be a subset of itself. We can enumerate these points without having to count them by considering each in terms of equivalence classes of pairs indexed along each axis, providing coordinates whereby a pair of indices and a pair of their successor is equivalent to the sum of the first and last of each pair.[1] This in effect allows us to draw a line that snakes through each point in the space. When that line's laid out it represents, through one to one correspondence between coordinate and index, a "count" line containing all points in every direction without having to index each. From this it follows that we can encode not only the indexed coordinates but the changes between these indices. Supposing that line is infinite, the collection represented by it is larger than the count of its members for the set of all subsets of that line is not a member of that line and therefore is in excess of it albeit constructed from its members. This collection provides all possible points in that universe and their distances which, if the count line extends two ways, this count must be raised to the power of the first series. This is equivalent to a series-successor which, if we take sets of sets of points in that line, by grouping them we get a count that is that line going two ways raised insofar as a subset that can be put into correspondence with each point on that line. This gives us an Ordinal categorization of this line with respect to its content. Ordinal-1 contains all sets of sets of points in the universe. To know however many groupings, i.e. formations (=shapes), there are, we move to the next ordinal, Ordinal-2, giving us how many inhabit the universe. If an entity in the universe can either have a property, exemplify a concept that determines or characterizes that property, or not, then all concepts that are necessarily possible are Ordinal-3, completing the system.[2]

Translating ordinals to worlds works in our system by considering ordinals as world-views (=models) of particular types. A higher order is a type of a type that contains, because built up from, its priors. As a type of arrangement that holds between members, we can talk of models of models via ordinal construction. This may seem hierarchical but is only such with respect to analysis. Within our system, we must think of this process as a nested procedure, worlds within worlds, a world of worlds constituting a universe. If of zero-type, we understand that this is the collection of all possible entities that can be arranged into a particular world. With zero able to be added to any arrangement without change, and as their basis of construction, the zero is both a part and apart from every possible construction. Ordinal-1 contains all possible worlds indexing a relation between members positing a world-model. Ordinal-2 represents a world of worlds, a model of worlds, which has the benefit of representing how one decodes a world in terms relevant to them and re-encodes it in a way that they

can represent their utilizing that model. Therefore, they're a member of the world indexed by that model for this relation entails that the former model has been embodied and then projected in subsequent contexts to test the extent to which one's reality can be captured utilizing those terms. (see Minsky) One's "self" is a model for how one navigates another model to explain their own world. In this way, that decoded model's limits with respect to organizing (=explaining) the experience of the receiver can be tested. Ordinal-3 is a world of world-models, a universe of world-models of worlds, a model of how world-models are related within the universe of possible world-views and encodes a system of world-models within possible worlds.

Notice that we have not left the world once, for the possibility to move up the chain is licensed by what's available in prior arrangements. Thus, if the zero of this chain represents all possible members from which a world can be built, then our first ordinal is a subset of all possible members, the second a subset of all possible possibilities, therefore containing the first, and so on. Containment of priors in what's articulated licenses an extension that refers or cites those antecedents as the input of a function articulating the necessary possibility of that output in the universe prior to that act. As necessarily possible, this does not mean a member of an arrangement to which we have access. The result of any operation is not necessarily known before but is a possibility by virtue of prior conditions, what's available, and can be considered necessarily possibly the case until actualized given certain conditions. For example, 2 always having been possible due to the constitutive rules of the universe of number yet only actualized given certain conditions, e.g. 1+1. If another subset is started outside of this chain, then ontologically this necessary possibility would begin another chain within the universe from which worlds of higher order can be articulated; but epistemologically speaking, these models would be meaningless to us unless introduced to our chain and decoded in terms functionally-equivalent across lines, thereby making that chain an extension of our own. As such, this is a result of the same world making capacity within this universe, a necessary possibility within the domain in which that chain is constructed. It follows that the zero is both a member and apart from any one world in particular, unifying our system: 0=all possible, {0}=1, {0, {0}}=2, etc.; W=0, W-successor=W_1, W_1-successor = W_2, etc. A fourth ordinal leads to nonsense, however, for that would assume a position outside of the universe of possible positions attainable with respect to others. That position's statements would be unable to be translated into another's world model, therefore, the extent to which it can be used remains undefined or contradictory.

Examples of this process abound. The Higgs boson was a necessary possibility within the standard model of physics, indirectly cited by all that we knew to be the case. But that particle's being the "Higgs" is conditional upon the frame in which the function of that term is determined. Improvisation in jazz or dance is a mode of expression operating over a domain in which all options within the world (=time and place) indexed by the song's current performance, that song being a finite yet open structure, are necessary possibilities although unheard until the right conditions arise, both compositionally and as a matter of the environment. Functional-equivalence allows for the content of phrases to be exchanged. The inner structure remains the same. The surface expression of that song, however, is a function of current conditions. When selected, these phrase's use have a determinate sense, representing an extension of the world and mood indexed by that song. Variation does not mean that we do not understand that the song being played is that song, yet the actualized version may be new to our ears. From these we find that a world is a model of a particular arrangement within a domain of necessary possibilities. If nothing is captured, we update the model, for insufficient within this world's affairs. If some thing is captured, then this model has actualized a future (=necessary possibility), presently—Amiri Baraka and Fred Moten discuss improvisational practice this way. Artist and scholar Rasheeda Philips of *Black Quantum Futurism* would state that in this way, "we meet the future everyday," allowing us to get out of the loop of a past met in the future that induces the need to evacuate the present of its content.

This surprising result not only brings together the idea that we can perform operations on this space from within, but that in this field its "infinite" interior can be counted as the collection of no one thing in particular. This proves fatal for the pessimist and the optimist mission to provide an alternative based on pessimist determinations. If a region is the case in so far as it is nothing, we can treat this determination conditionally as something given nothing, i.e. if "nothing" then something. Obvious questions abound but if we treat this seriously within our coordinate system, this conditional is considered by way of the distance traveled from point to point as one's change in position on one axis with respect to a change in the other, i.e. exponentially. If a region X is treated insofar as it's nothing then we can represent this as X^0. However, in this interpretation, no one thing insofar as nothing produces everything. If 0 is nothing and 1 is all, X raised to a with respect to X raised to b is equal to X raised to $(a - b)$. If $a = b$ then we have X raised to a with respect to the same, thus X raised to 0. But X raised to a with respect to itself is 1, ergo our statement above. So, if conditionally if nothing then something given nothing, i.e. a region insofar as it's empty, then if nothing is the case then something is an element of nothing given that condition.

This paradox is not up to us to solve for the above amounts to a collapse in not just the optimism/pessimism divide but the need for either. Pessimism would have to produce an object from 0-space to prove that it's empty. However, if that space is indeed empty, there is no object that can be produced to prove that it is a vacuum. The determination of that space as null really proves that that determination as no thing is a part of this scheme and therefore everything follows. No one thing in particular means any thing is necessarily possible. For us, this shows why the null set is both a member of and in excess of any determination within this space. For if a function of determining that space is that space only when that space is at its zero, i.e. prior to projection, then any one object can satisfy that determination. In fact, the function itself becomes that object, making it the means of expressing the property of being in that space and, therefore, the function itself an object within that space. If occupying a point in space is a function of one's coordinates (=location), functions as they apply to functions means that composition within this manifold dictates what is or is not possible and, therefore, necessary when regions interact, not what is found in the manifold itself irrespective of other positions. The content of worlds are their means of construction.

Models of the world and what is possible therein are constructed from other models, a loop that entails that the objects of the world and their determinations are constituted within this circuit, not outside of it. (Hall 1996) Hence, this is the world we have. (see Goodman, Minsky, and Moten) The function of composing worlds from worlds can be abstracted for given a model, if it's that case that, if implied in that model is the function of its construction, therefore there is a function of construction, then we obtain that model given that function. (see Church) From this we see how we actualize an abstract object in the world we inhabit by virtue of the model we use to organize our experience. That function, given the definition above, is an object in the world given a model that when asked one can posit determinations regarding the world it encodes. A functional-equivalence can obtain between models despite the difference in the terms used given that very same definition. Recalling the way we laid out every possible point in a universe, which shouldn't give us pause as Einstein gave a way of calculating its size, given sets A and B, from A to B means that A approximates B when an object in A and an object in B entails that a function of the first object produces the second object as output. Changes in the domain indexed by A model changes in B, determining the range of that function's application, i.e. the extent that the concept (=abstract object) indexed by that function obtains when applied in subsequent conditions.

This does not mean that everything goes. Unrestricted exportation from models across all possible worlds, from determination to it necessarily being the case, does not hold. (see Kripke) Functions are abstracted from models to which we already have access and are decoded, always, in terms relevant to the receiver. (see Hall) This imposes a limit in which the significance of determinations have value. If universally applicable, the concept would be useless for one would not know where or when

to apply that concept and therefore never have use for it. The pronouncement that this is the best world does not necessitate its being so; neither does evacuating it of all significance! Even in fiction, the constituting rules of the story license certain statements that are true insofar as the story and those that are false, unless a fiction within that fiction is taken up which is not contradictory to its own rules and not conflated with the story itself. Notice our quantificational puzzle above as it pertains to modality. "For all there exists" determinations lead to a pronouncement of existence outside of the story.

What's the significance? If world-views (=models) have a shape (=outline) then they have content (=volume). We can speak of the (surface) area they circumscribe in space-time as the relation drawn between their coordinates, intervals between instances indicating their movement. Their content is a function of the intensity of activity within that space, providing an indirect measure of the possible activity therein. As such, significance is the ratio of that area given that content. If a world indexes a particular relation in space and time, we can conceive of space itself as an elastic, flat, surface that when a formation is placed on that surface, it sinks into that space in proportion to its significance, slowly wrapped by that sheet, enveloped in space. Yet prior to sinking we can trace that form's shape on that surface. Relative to other formations, the different parts of the surface of the formation itself is covered at different rates. It is, therefore, angled, the difference between the rate at which the form sinks and the portions of it that are covered provides a theory of the moment of that formation; the angle of that moment generates spin, i.e. distinguishes how we see it or the rate at which its various aspects are revealed relative to us. Resultingly, the shape of the space around it forces the formation to move. A formation's inertia gives way to its mass, a measure of its significance within that space. As such we can look at its significance relative to other formations as the difference between one formation and either another formation or the space indirectly defined as the converse of that shape. This indirect measure of space provides the shape of the institutions or conditions that license or bar the expressions constituting the shape of the form of life under study, therefore, space is not empty.

Changes in shape, then, record the significance of an event. This mutually constituted system explains how institutions, composed by a relation between formations, tell those formations how to move, corresponding to our definition of moment(um) above. Socio-culturally and politically, consider the Black Lives Matter movement. One that is claimed by its founders as being defined by way of its distributed content, as a network, a global movement. The breadth of distribution gives us the surface area while its depth is understood by way of the amount of actions at each node. In some instances, we can have a formation with minimum surface area and maximum volume. A black hole is defined as having an infinite negative radius, so when taking the area and volume ratio they cast a shadow of the light bent around them. Light falls in but, from our view, never truly reach the surface of the black hole. (see S. Haco, S. Hawking, M. Perry, A. Strominger) Black holes compare with cynicism and nihilism. If information is the measure of the reduction of possible interpretations, certainty (=absolutism) produces no information, therefore information, considered by way of the knowledge it affords, is coupled with, means that cynicism destroys meaning. This corrosive pessimism leads to a state explored by Gilroy's discussion of melancholia. However, in the model above, we have shown that some information remains, even for Black holes.

To say that this is the best world we would have to step outside the means of constructing that statement which would be impossible. We would rely on those same means to make that stipulation or make a non-worldly world statement from which anything goes due to unrestricted exportation. The age-old adage to step outside one's mind to speak of the contents of their mind, or to look at one's eye to see it seeing, has negative repercussions, e.g. "to be outside your mind." Giving up the argument between optimism and pessimism, we realize that we have and only have means to construct worlds in which claims about it can be made and held accountable by those means we know to be the case, evidenced by having the ability to make a statement at all. Leibniz's argument leads to an induction problem for from the perfect we introduced in its successor something that does not have access to that origin, otherwise it would be that origin, thus being a subset of the perfect, so not

perfect itself. This means that from a position in the future, where perfect begets perfect, with pessimism being the point at which we determine a subset of the perfect and optimism a reclamation of that origin, both can be viewed as concurrent propositions from a future position. Gilroy warns of this reclamation of origin and the myths that ensue to legitimize tactics to get back there. We, by our definitions, are the corrosion of this state because, created from the perfect, are the horizon of possibility to articulate what are necessary proposals from what's been licensed, i.e. made possible, from priors. Doesn't sound so pessimistic anymore. A retroactive distinction to characterize an origin to dictate the future is the problem. Pessimism and optimism are paraconsistent from some future position, explaining the evolution from one to the other as melancholia, a longing for something that's never been, or to which one has never had access.

The above amounts to there's no need for a transcendent stipulation, one which inevitably leads to collapse from a non-worldly world determination. Consider a series of world statements. If a statement within that system is not provable in that system, i.e. "this is the best world," for viewed in total, then we can assume that the possibility to form that statement indirectly follows the constituting rules of that system and hence can be added to that system creating a world-successor. The ability to form it implies that it must be consistent with some arrangement of statements but because about the system overall, cannot be proven for all of them. We go on to say that the new system is a subsystem of the current one, for abstracted from some combination of statements therein. Otherwise, the world-successor is not a part of the overall world-system. It follows that alternatives can also be constructed by combinations of these subsets of statements which are not themselves members of the original system but formed of its members and thus licensed by virtue of that which they follow indirectly. These poetic computations follow from associative thinking, a poetic apparatus detailed by Moten.

From this we can provide a formal definition for how these possibilities are necessarily possible within the original set of statements. If a concept (=view) indexes a possible bundle of statements capturing a set of experience, i.e. a possible world, then that set determines the state of affairs of a possible arrangement (=world-view-model) within the system of all possible statements; if a world asserts that for all that is that bundle, that bundle is possible, then it is the case that there is no subset of statements in the overall system from which that bundle was abstracted that asserts the negation of that possible world, i.e. some statement in that system asserts that possibility's antithesis. It follows that each bundle, although a subset of statements in that system, represents an extension of that system because made of a particular arrangement of its components and, thereby, considered real. Multiple subsets can be considered individually and combined (=associated) in accord with this same process. They are not interchangeable, yet not mutually exclusive with respect to the system wherein selection of one does not bar the possibility of the other. We can treat the system as having had these possibilities indexed by these views prior to abstraction, actualized given the model used to analyze the system. The world-view represented by that subsystem and in which that encoded concept's function, the best world for it, can be determined by this procedure. We can then articulate an instance of this necessary possibility as an extension of the world we know to be the case, one that was always there, as yet articulate. This procedure is an articulation of necessary possibility, articulation in lieu of necessitation. By completing this process, we do away with a transcendent non-worldly world origin, for the arrangement made and encoded is an extension of this world and, in so doing, we've added to the material to articulate subsequent alternatives, changing the world for future iterations. Transcendence is boring, so is the point where pessimism sets in following optimism or, conversely, in reaction to that foreclosure of possibility.[3]

Talk of movements possible and actualized in spatial terms allows us to formalize how to construct possible worlds from what is given, thus making these virtual possibilities necessarily possible because embedded in the domain as alternatives that can be articulated by arranging the relations between members in different ways. There's no need for an "origin" in this framework although we understand there was an emergence given certain conditions. Origin becomes the point marking

the event where terms break down exactly where the function of the origin is the origin, a fixed point.[4] That point is where the function instantiates the zero of the series it produces, what determines what counts as a member of that series prior to its application. One would have to step outside the very means by which what follows is licensed for want to claim an origin. Coupling it with an instance leads to demise, and they must resort to an axis which is the tangent of one of these coordinates but no longer inside the resultant formation. This axis is imaginary, yet that origin's related as the inverse root/route moving up and back at each point selected as an origin in space. Thus, there is no one point in particular from inside a formation by which "origins" are absolute. Articulation shows how imagination can be real but only from what is necessarily possible given enabling conditions. Origins instantiate a process but are not interchangeable with each instance that follows as the input for the next step is the output from prior.

Given determinations are relative to one's position with respect to the formations of which they are member, optimism and pessimism appear at the same time globally and then annihilate each other again and again. However, when considered in relation to other formations, when making those determinations they split, contouring the space allowing us to move, not orientated towards one camp or the other, but oriented in the space their intervals constitute. As relations begin to form we must say that different possible arrangements exist simultaneously before they settle into either formation. Considering movements composed of various components as vectors, as having direction and magnitude, i.e. subregions within that space, then the convergence of these formations within which it can be said that they cover the same phenomenon or concept is the sum of the pairing of each aspect. It follows that to highlight one of these components in relation to others makes that determination relative to the position of the observer in these joint affairs. The determination is yes/no given the frame used but each component must be necessarily and equally possible prior to determination. Otherwise, no aspect of either vector or their convergence could be determined. Focus on aspects decreases our capacity to track movement; focus on movement decreases our capacity to determine the interaction between components reproducing that vector over a distance, i.e. some interval.[5] Focus on one instance of Black Lives Matter makes it impossible to see the same movement operating under a different name elsewhere. Each formation can enact nonlocal effects on the other prior to our determining what the probable outcome of this convergence might be. Any crystallization of a new form is one out of a finite yet open number of possibilities.[6]

Since the significance of a connection between points can be considered relative to the inverse growth of the distance between them, this line can be considered possible even when we have not selected two or more points. Focus on lines instead of points means relations, akin to functions, can be treated as objects and we find that we are looking at points in space as being charged, like repelling like and opposites attracting, propelling one's movement along some vector as local polarity changes, thereby stretching space. A model of what is measured as "polarization" in socio-cultural and political affairs between and within regions in that space is possible, with polarity only conceived in relation to each other through their operations, i.e. how they function in that space. Ising models have been used to this effect, where polarization describes changes in charge, given interactions with neighbors, different shapes form as a function of the "temperature" of their environment. Based upon our selections, a change in lines drawn relative to what's available allows for a wave like measure to appear within the field constituted by a movement between points. Instead of points, in focusing on the lines between them, interaction now means that as lines are composed, they push the direction of others by this inverse (=reverse image) relation. The boundary of the formation oscillates, constantly changing the space, i.e., distance between selected coordinates in the process of composing formations in the field.

To move from this model to the structuring of experience we must reduce movement to a determinate distance. As a formation in this space is projected towards the movement of another the imagined result is the reverse image of that projection angled in another direction resulting from

their interaction. This can be triangulated as the root/route of their square distances measured towards that point of interaction. The significance of interaction is the decrease in the projected angular movement towards a region i.e. orthogonally or back and in a different direction, to which another formation lies, hence the triangulation. This unifies Glissant's theory of relation with our material reading of the continuous movement of various formations as vectors of different amplitudes, i.e. significance, linked to the probability of being actualized within a frame. Of course, as movement is continuous, whether a formation becomes an object within a particular framing of space constitutes a reduction to the probability of being captured in the model, causing jumps. For to "measure" or observe some formation's position is done with respect to a frame; if considered a function of its movement with respect to others, this motion is continuous and what is registered at a point is the amplitude at that point. So if that movement doesn't register given some measure, it doesn't mean it's not there, but is at an intensity that doesn't register given our frame. Something's never register and therefore are unreal to us. Different amplitudes register at other points, but if measured at another position, the probability of registering is equal at each position until a frame's applied. That entity is at both positions until measured, but when measured that relation's lost. Physically, this is called functional collapse, here modal collapse. Projection into this new region can be consider by way of a set of possible yes/no options where the probability to be actualized is a function of which obtains given the frame. Hence, that vector's reduction to probable frame, i.e. the collapse. Collapse entails that a determination of this being the best of all possible worlds is equal to all other options, thus the conclusion that given this is the only world we have, making alternatives is what we got. Optimism and pessimism are arbitrary distinctions save for retroactive determinations.

The energy within a system of relations between different forms as a function of their frequency of interaction is itself a function of the momentum with which these formations travel. This is ascertained from the force of impact derived by change in shape, indicating a change in the distances between the constitutive points of that formation upon interaction with others. Resultingly, there is a conversion between energy and the shape of these formations proportional to the maximum observable motion in the overall system. This is ascertained by way of the frequency of interaction/contact with others over some distance/interval.

So far, we have considered the best of all possible world argument in the following way. If this is the best world, then it's necessarily the best where the necessity of the best world means that this is the world we must inhabit. However, this determination is contingently necessary; its necessity cannot be proven for this determination is embedded in a conditional statement whose license references a system which allows for universal statements that can be vacuously true. So, although this statement is deterministic, it requires an external stance to the world which cannot be attained. We are the current world's inhabitants and if we leave to make that statement, that world would be necessarily empty. As such, this statement cannot be universalized across all possible worlds for this is assumed to be the only world and therefore admits of the necessary possibility of better alternatives. However, this is not a dismal situation, for what is constructed as a necessary possibility from this world represents an extension of this world that is real given the frame utilized. So it's the conditions in which these possibilities can be actualized which is the true object of this statement, not any one thing in the world which must be the case eternally. Thus, the best world is indistinguishable from this one for constituted by different arrangements from the components of this world, indexing what statements do or do not apply as a function of these formations and their relation to others.

As such, optimism and pessimism can be considered through functional composition. If pessimism corrodes relations between frameworks projected to organize our experience, its output becomes input for optimism, not as a thing labeled such but as a function whose output is relevant to both domains. Optimism and Pessimism's output are functionally-equivalent, which implies that the distinction between those domains was only retroactively made, although across domains their output operate in similar ways in response to the conditions they produce. It is not about which

program to follow but what we're doing. Treating movement(s) as physical entities, as real, we quickly see a paradox that arises in a conception that may seem to lead to pessimism with respect to the failure of a particular condition obtaining here, now. The idea that one can change the world before changing one's self implies that one can occupy a position outside, therefore not of, that world. We have shown how transcendent arguments lead to collapse. To do this, one must abstract, then externalize that version of themselves to act as they're apart from the world they wish to change, to universalize that change. In most cases, the frame represents what is contrary to what is the case on the ground, for how would they know since they've left. The version they've constructed is from the past and assumed to model future conditions. This leads to an inevitable problem, for one cannot get out of their own way, get over themselves, in order to change the world they've mapped. Their map reduplicates issues of self in the world-image constructed and utilized to organize the affairs of those it captures, eschewing accountability for that creation because one can just defer to that image when the effects are not those desired while assuming a self constituted via the negation of others. (Robinson 39–71) That world-image is only useful insofar as it can be decoded by others in terms relevant to them and when projected the objects of experience captured by that re-encoded frame obtain a functional-equivalence with those captured by the encoder. The basis for construction is an intersubjective network in which determinations over the operation of objects can be made. (see Hempel)

The effort to stipulate that this is the best world from an external stance, without participation in that world, reveals why some practices canonize a question rather than construct and present alternatives that can be tested and revised by others. To cultivate a supposed mastery over a stipulation that generates more and more questions requiring the same mastery to solve means there's no system of validation save the identity of the question itself. There is no one object that can be generated from this inquiry save the question itself. The question bars others from modeling the conditions that proposed this question in the first place. Those in the world must defer to the expert that posed it and who "owns" the means of determining what is allowed in the domain or field it defines. (see Martin and Rustin) There's profit to be had in such a set up. It feels better to identify what is wrong rather than compose an alternative.

If this is the best possible world, then we must conceive of the world as a whole, which is something that is conceived prior to its formation. This entails that the process of its formation can never get off the ground for it is already preconceived, causing us to long for an object that has never been formed. This utopic version of the world leads to melancholia for it can never be satisfied. But why ask if this is the best of all possible worlds? It's a dubious question because we would have to step out of that world's evolution, thus outside of the world, to talk about a world already constituted which is, in point of fact, an unworldly determination, one made outside of the world in which that determination would be relevant or significant. This fact necessitates that we must make and remake a world from old versions, again and again, making "the best world" question senseless in some ways, albeit an exercise that reveals much about our current predicament.

Above, we made sense of world-making and its limits by re-encoding what is given to terms relevant to the form (of life) to which those means were introduced, revealing what Amiri Baraka said so long ago, that improvisation is praxis. The constituting rules of world-making composes expressions of forms of life not experienced prior to this moment. However, because fashioned from terms whose functional-content obtain some model linking conditions to successive contexts of assertion, in combination, they are now immediately valid in virtue of those principles, although in excess of what was previously codified. Why hadn't Lazarus been left to reside in paradise? For the world beyond is to be made here and now. A necessarily possible future, actualized presently. Why did Thomas doubt? To question orthodoxy by the terms of their construction.

To question begets a form of life, a pursuit; not a rule of life, one whose rules are followed blindly, made out to be universal, eternal. Forged outside of the world they're, most likely, inappropriate when applied for vacuously true. We would not know the worldly condition in which they do or do

not apply, because made up of terms appropriate to the time and when universalized into the future, cannot account for current conditions. They're fixed in reference to a time long gone. Even if the perfect world would show up, we wouldn't be able to recognize it based on our measure of what it means to be the best of all possible worlds; one abstracted from unworldly conditions. "This was our paradox: no course of action could be determined by a rule, because any course of action can be made out to accord with the rule." (R. Jones 145–149, 160–162; Wittgenstein 185, 201a) As such, this return to an inner creative capacity, to question conditions by experimenting with necessity, allows one to reveal more of what could be the case prior to what's been actualized. World building and model building go hand in hand for questions about the world can be answered utilizing that model in a way that can be tried and tested by others. The model of that model places us within that world and reveals the process by which pessimism may corrode an opening for compositional operations to gain material to make for better approximations of the as yet, and include us in the process.

The Cooper Union for the Advancement of Science and Art, NY, USA

Notes

[1] This deserves explicit detail. The integers Z = 0, ±1, ±2, . . . can be defined in terms of the natural numbers N=1,2,3. . . as equivalence classes of pairs (coordinates in a plane) where natural's (m,n) are equal to (m–successor, n–successor) if and only if m+n–successor = m–successor + n and where we think of (m,n) as m – n. This provides a snaking through all points in a plane where coordinates are encodings of the abstract object that is the concept of an integer characterizing the property of a count, i.e. induction and recursion. Enumerating these entities by way of their function, functions considered objects by the definition above, these entities are very much so a member of this space albeit not a thing, a necessary possibility for determining what that space is at all.

[2] There is an argument that if we only counted Borel sets, the union of open (< relation) and closed (complement to open) sets, then if there are only ordinal-2 many regions in the universe then there are only ordinal-1 many Borel-regions. This means only ordinal-2 many concepts.

[3] This process is a reconsideration of a technique developed by Paul Cohen called forcing (1963, pp. 1143–1148). Anticipating some backlash against this term used in this context, for it lends itself to notions of coercion in the field of cultural studies, we opt to articulate (a possible) arrangement which was not currently a member and yet because composed of them represents a real extension of the domain under consideration. Thus, constructing means to access alternatives that were virtually possible all along is what is meant here.

[4] A fixed point can be formalized but invites a notion of self-reflexivity which can only be defined by way of a formal notion of substitution. Consider the instance when the function of an object's mode of expression given certain conditions is that object, i.e. indexes those conditions as the initial context of its instantiation. Thus, that object possesses a property that proves some statement about those conditions. Now consider a framework or system proves that statement if and only if there is an encoding of that statement in that system that possesses that provable property. For this we need a function of substitution such that with that function, an object with that property and a symbol are input and produces an encoding of that symbol possessing that property. To show this, consider a function of an object such that we can substitute that object with a symbol in such a way that that operation possesses a property relevant in the current system. Now consider that symbol is an encoding of that function. We need to show that a statement identifies the function of that symbol if and only if to possess that property we can substitute that symbol for that symbol. Well, if that symbol encodes the function of that symbol, substitute that symbol for a symbol means we have

an encoding of the function of that symbol which also means that we have an encoding of that statement by definition thus the statement identifies an encoding of itself as having a property relevant to the system.

Effectively we have formalized an encoding/decoding mechanism wherein a relation between features of a world are encoded in terms relevant to that individual and when projected capture a world-image that when communicated to other's is decoded in terms relevant to them and when asking the former questions about the world via that image, the former utilizes this image to form explanations and the latter ascertains the extent to which a functional-equivalence between objects that obtain the corresponding images of each individual obtain. As such, this notion is formalizable but incomplete when making a universal statement about a formation following some point of origin from within that formation for the set of points of origin are recursively enumerable but not all points are recursive, i.e. lead to the formation we expect. We have shown a recursively enumerable procedure for manipulating infinities in our proof of a non-empty space and here for determining "origins", however, an origin is not recursive in itself, which seems to fly against our intuitions for an origin is iterative in the sense that it produces what follows and yet origins do not iterate themselves for the input for the next iteration is a function of prior output.

[5] Consider vectors V_1 and V_2, each having component A,B,C and D,E,F respectively. Then the event of their convergence composes another vector whose components are correlations of the activity of the former two, thus $V_3 = -V_1V_2+AD+BE+CF$ where an observation on one of the vectors going into that interaction will effect the other for V_1 considered in relation to V_2 alters AD,BE,CF,V_3 in relation to V_2 as well.

Now consider a "state jump" in the state of affairs where V_1 becomes V_2. This is a jump for consideration of whether the change has taken place is a yes/no function of the framing of the situation even though underlying this event is a continuous process, thus evolution itself is not continuous for what is highlighted as being relevant to conditions is yes/no but the capacity to be otherwise means that all possible changes are present in that vector prior to determination. If V_1 is headed in a particular direction then V_2 is one of two or more expressions of V_1, composed of an arrangement of its subcomponents which is not a component itself but a combination that is constructed from those components therefore virtually the case before hand and actualized given certain conditions, that is "orthogonal" to, i.e. vertical determinations upon a point in, that line for if V_1 is the sum of components that are subsets of that line the distance traveled along that lines evolution makes an observation anywhere on that line a radical determination, i.e. the root of the squared differences between points on that line marking each subset. Up until that determination, we are in the process of V_1's evolution in the direction of V_2 and immediately after is one of the necessarily possible alternatives determinable by that observation, each of which must be the case, simultaneously, until the determination is made. Nonlocal action provides a model for articulation theory, how these concepts emerge not what thing to which they attach, for conditions focus means a relation between local action and global changes, individually complex yet collective simple given the conditions, is possible. An act in another region changes global conditions such that what emerges in another does not have a direct causal link to that prior act for not in its purview and yet that act was a factor in changing conditions so that that possibility can be/was actualized.

[6] Consider a plane where different lines are converging all at once based on a defined parameter on modes of interaction with their neighbors, the possible shapes that come to fruition all were the case prior to the form settled on based on these determinations in such a way that points in one region indirectly effect those to which there is no determinable connection, yet, thus exist simultaneously until given a certain condition a definite shape emerged which is either that shape or not once that framing is used.

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