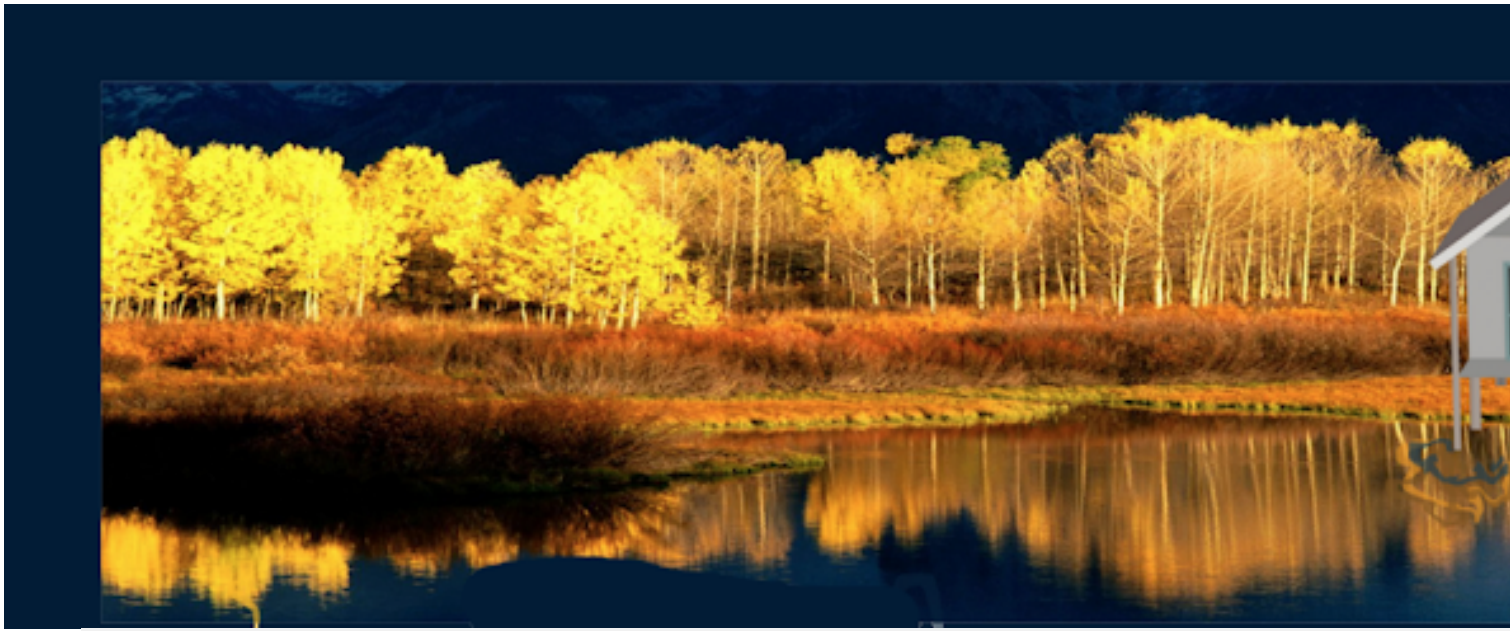


Monday, April 27, 2015

Intro to Ludic Ecologonomy (Pt. 1)

ARGUMENT

Game Form is
Ecological and Economical,
neither one reducible to the other;

Eco coming from οἶκος for household
Economy meaning Management of the household
Ecology meaning Ground of the household

The Economic aspect is described well by
the optimal strategies of Game Theory
Games as RULES

The Ecological aspect is described
by Ecological Psychology
Games as AFFORDANCES

Computer games are complex toys
Like financial derivatives
All software Toys:
Turing's choice-machine
from his 1936 paper (section 2)
"whose motion is only partially
determined by the configuration"

The existence of computer games
As Games
redefines Toys As Games
Because we call them games
But they are toys
Toys have AFFORDANCES
but NO RULES

All games have affordances
Not all games have rules
Ecology is the Ground of the Economy
Ignoring this Ground is proving deadly on a Global scale

This has been sitting around for a while. It's what I intended to speak about at the NYU Practice conference last year, but got sidetracked by some videogame prehistory-- Here's a video of that talk, I start talking ~ 33 minutes in, after a nice Counter Strike level design talk and introduction from the wonderful Robert Yang:

PRACTICE 2014: CS:Go & David Kanaga from NYU Game Center on Vimeo.

0.

The point of the ongoing theoretical project I'm working on is ~ to attempt constructing a 'formalism' of games which allows *GAME* to mean (very broadly!) *played form,* no goals, optima, etc. required-- a FORMAL GAME which is as inclusive as possible of all the strange & diverse forms available for designers/players to work with. I am convinced that abstractions which accommodate new strange forms are better than no abstractions at all, because "no abstractions" just means "the status quo abstractions"-- so I am attached to formality and its search for new abstractions.

The goal is to be scientific about it. I am convinced that the raw materials of 'computer games' have radicalized the meaning of the concept 'game' more than some folks have yet caught on to. The machine is fully formal, already a FORMAL GAME. Logic and mathematics are its 'blood', and these are already games of a sort. As mathematician Paul Cohen writes, describing briefly a history of formal logic leading up to Gödel's famous proof --

> "According to the Formalist point of view, mathematics should be regarded as a fully formal game played with marks on paper, and the only requirement this game need fulfill is that it does not lead to an inconsistency [...] In these notes, our first object will be to describe how a mathemarical system can be reduced to a purely formal game" (*Set Theory and the Continuum Hypothesis*, p. 3)

The play of any sting of computation, or what is computed-- *a theorem*-- is already a formal game, and there is nothing at the level of 'goals/no-goals' or whatever other epiphenomenal nonsense, which can prevent a piece of computation from being a

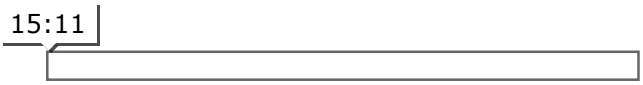
game.

The animal (our self) who plays with the computer, however, is NOT fully formal, and thus what is perhaps an inconsistency is introduced, between the formal game of the machine and the informal game of the animal-- there is a fascinating tension at the point of contact between the mechanic and the organic, and this tension is the driving energy of the theory here considered.

To this end, LUDIC ECOLOGONOMY is designed as a partner piece to the *flux dogma*, that aesthetic doctrine which is obsessed with *variability*, and which I 'articulated' in the "Object, Substance, Organism" presentation from last year's GDC:

Music Object, Substance, Organism (GDC 14)

David Kanaga



Music Object, Substance, Organism (GDC 14) from David Kanaga on Vimeo.

I described that talk as 'wet';

This one, to the contrary, is my 'dry' take on games formalism-- *forgetting the expressive particularities of the player for a moment...*

Alongside the variability or *play* of games, there exist its constants or *invariants*-- its "more rigid structure"-- alongside its liquidity, there is its solidity-- alongside its "free movement" or *play*--- there is the Form of The Game. In the case of a computer game, the strict form is the *software object,* including all of its outputs and inputs and internal machinations, but not including the player (only the PlayerObject). In the case of a non-digital game, sports especially, the Form can be more difficult to define, encompassing *essentially* both rules and bodies, abstractions and raw materials.

In the past, I've claimed that *games are music*. I've not changed my mind about this, but I've changed the focus for the time being, the approach to asking *how are games*

music? or *how are games games?* What is the nature of this formalism which is not so much *anti-formal* but is rather trying to describe a different (and I think more accurate) formal ground, which may resembles anarchy to defenders of the existing ground?

The Form of Games is dualistic-- Economic and Ecological, the one dealing with rules which can be broken and changed abstractly, the other dealing with forces which cannot be broken and which can only be changed by concretely reconfiguring the materials conditions which cause them. This is the ground, not goals or optima or anything else-- those are economic categories.

The two "Eco" disciplines must be recognized and synthesized into a whole, with economics via game theory allowed to serve as connective tissue to political economy, and ecology via Eco-psych allowed to serve as bridge to the Earth sciences and aesthetics and natural philosophy as a whole. The political aspect of games, far from relying on narrative representations of political themes, exists innately in the 'micro-ecologonomic' relations of the game machine to the player, the feelings, tasks, duties, considered as affordance and as labor, or if we are lucky-- as play. Work and play are not *quantitatively* different, both are simply-- *motion*. The *player* is a worker. Thermodynamic work is thermodynamic play.'Marcro-ecologonomic' relations of player and game materials to the Earth follow, properly called 'ecological economics,' an approach which understands living things, non-human flora/fauna and human laborers both, to be essential to the play of the global economy, and only able to be reduced to commodity form (Land, Laborer) in what must be read essentially as an act of violence.

Lana Polansky wrote during the most recent games-formalism debacle "if your critical analysis for some reason absents structures of power: YOU SUCK AS A FORMALIST" My approach here does indeed suspiciously overlook structures of power for the time being. However, the bridges from economics and ecology to power are manifold, and I hope the absence can be felt not as a vacuum but as a ghostly *haunting* during this reading, making its absence felt between every line. *Force* and *Rule,* for instance, mean something very different, and often troubling indeed in the context of explicit class/privilege/political power dynamics than they do when merely describing the mechanics of football . These questions of power are already being explored beautifully by Polansky, Cameron Kunzelman, and others. As a small contribution, I would hope that the notion of Power could be used to describe the most ordinary, gentlest possible interactions between things in addition to bigger political questions. There is some enchanting ecological thinking in Plato's Eleatic stranger who says: "My notion would be, that anything which possesses any sort of power to affect another, or to be affected by another, if only for a single moment, however trifling the cause and however slight the effect, has real existence; and I hold that the definition of being is simply power." (from The Sophist). Affect and affordance are closely related. Ground and power. And in John Coltrane's *Love Supreme* poem: "One thought can produce millions of vibrations and they all go back to God... everything does [...] His way... it is so lovely... it

is gracious.It is merciful--Thank you God."

For the purpose of thinking of games as explicitly political creatures as well as for simply trying to come to terms with some of their most basic and apparently vacuous (but merciful!) qualities, like the *feel* of something,. the jump height which Andi McClure brings up in the above-linked quote from Polansky, I hope this approach might prove useful as one means of conceptualizing any number of other 'cousin' concepts in the eco-family considered vis a vis a dry and formal approach to games, from very big to very small.

1.

This is all premised on the formal axiom that there are two and only two sorts of structural invariants which define the form of any given playspace. *This dualism cannot be stressed enough*.

The first kind of invariant, *rules*, constitutes what is in effect an abstract legal system that play must abide by if it is to be considered lawful. It is against the rules to run

while holding the ball in basketball. It is against the rules to perform a 'Eb' in an orchestral performance when an E is written.

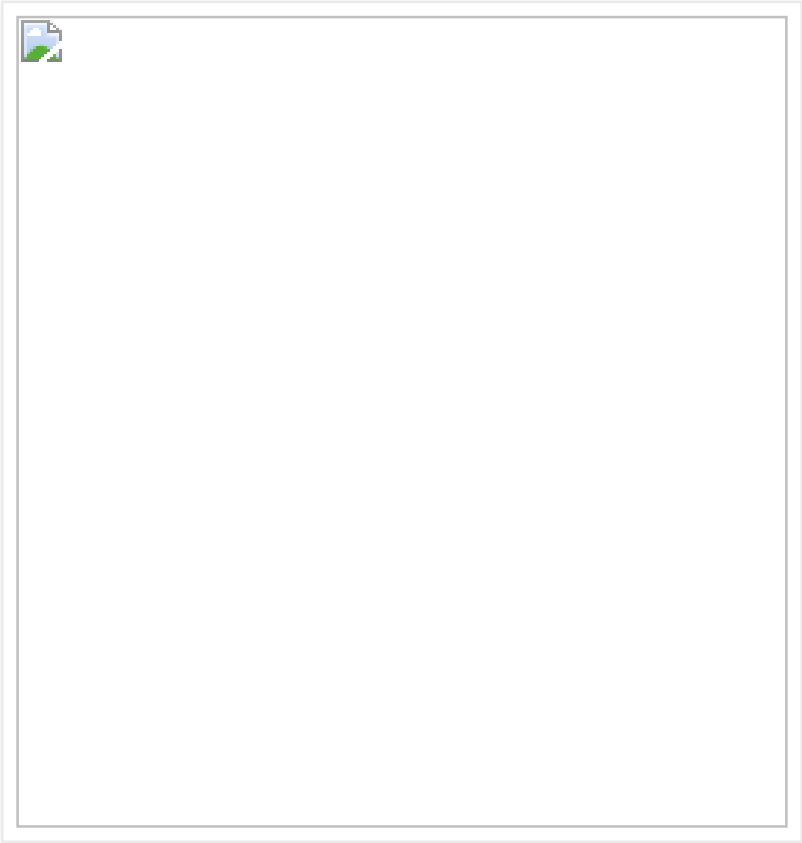
Rules can be broken.

The second kind of invariant, which I'll begin by calling *forces*, compose a system of material-energetic tendencies which are fully actual and not abstract. They cannot be broken. In basketball, and in so many games, the *ground* is an example of such a force. If the court were *made of jelly*, the game rules would be unplayable, because dribbling would be impossible. If you are playing the flute, you will not be able to perform authentically one of Cage's pieces for prepared piano. *Hatha* yoga is the yoga of bodily exertion, and *hatha* means force.

Forces *cannot* be broken-- (their causes can, however, be *exploited*, and *changed*, which we will go into shortly).

(I am not using *force* in the sense it has in physics, which I don't understand enough to use. I hope the intuitive usage is clear, and that it becomes clearer as we go along).

2.



Some formal definitions of games, like those proposed in Keith Burgun's model, which develops a strict line of 'game-essentialist' thinking with good clear consistency,

consider it necessary that the first type of structure, Rules, be present in a form in order for that form to be be called a game. Burgun defines a game as a 'contest of decision-making'. http://keithburgun.net/interactive-forms/

This model says-- if only *forces* are present *without rules*, then the form under consideration is not a game, it is a 'bare interactive system' or a *toy*.

This is a very good model to analyze, say, a game of chess, which indeed, is composed of many rules, which players are meant to keep *in mind*, and utilizes forces in only a few trivial ways (holding pieces to the board, different shapes to differentiate use-values of different pieces, different colors to differentiate teams, etc). Indeed, board games in general are largely amenable to a rules-analysis framework, and so an ontology of games which is rooted in board game history rather than, say, painting or swimming, is apt to emphasize rules at the expense of physical forces.

But run-time computer games, considered as active materials, are composed solely of *forces* and *not rules*.

Before a game is compiled, when code is still being composed with as a raw material, the designer is subject to the law of the programming language *as rule*, and indeed can within this legal system change the rules of her game with simple abstract commands, sufficing that they are accepted by the programming language as legal.

But once the game is compiled and running, what was abstract becomes fully concrete, a *force* which cannot be changed but only redirected. It is enough merely to recognize that we can do whatever we please with a computer game, it is not our 'ruler' (as much as it may try to be). The 'win/lose' psychological prod is an illusion with computer games. We need not 'believe' we have lost if it tells us we have, we can *enjoy* the lose-screen as an aesthetic moment, we can seek it even (as I used to do playing Mario Kart, to turn into a bomb)-- when we have ostensibly 'losy', we have instead merely encountered a bifurcation in the system, a simple breaking point between two possible values of which one is not intrinsically better than the other. The only time a computer game becomes a 'game' in the strict sense like chess, where *winning* is certainly the right thing to strive for, is when we allow it to because we want to, because we find that rule beautiful, or (oftener, in my case) when a social community imposes this understanding of the form on us.

In other words, computer games as objects, decoupled from their players, and considered in light of the strict game-essentialist formalisms, are not games proper, but are merely toys. This is equally true of *Civilization* and *Electroplankton*.

They are rules transmuted to force. Formal games made to sing to the sense experience of our animal selves.

It is useful to nitpick about the form in this way, because *strict categories with predictive empirical validity are useful,* and as long as we are calling computer games 'games' in the classically strict sense of the word, we are being unscientific, and not very strict.

It is my present conviction that this is not a matter of subjective opinion. There are more and less valid ways of analyzing these materials.

The goal is to produce a *realistic* account of the form. A *Ludic realism* which asks what games are, and *how* particular games (or *classes of games* in the case of computer games) are games.

Ludic, as I'm using it, means not only the stricter economic meaning of 'game' but also the looser form of 'play' broadly. English is somewhat unique in separating the concepts *game* and *play* .... *Spiel* is a German word signifying both.. Do you know other examples? A linguistic study along these lines would be interesting, maybe has been done, maybe I am missing something big...

In any case, the insistence on there being a major difference between a 'game' and a 'played form'-- we might call this insistence the "Washington consensus" of game definitions, paralleling as it does the economic policy going by that name inasmuch as it prematurely declares consensus before all participants have agreed to the plan.

Ludic realisms seek a global or even universal consensus. *Ludic Realism* is a doctrine that insists that the concept of *games* and *play* must be made to scale and to pan, to be *inclusive* of all the senses in which these words are used, and to develop an ontology appropriate to that breadth, to acknowledge that there is a vast plurality of different forms of games, and that we may not *get* them all..

The Hindu *Lila* which considers play to be a divine ground of the universe, is an example of a ludic realism.

So is the language of The Great Game used by Rudyard Kipling to describe the play of British Colonial forces dominating India and its neighbors in the late 19th century.

So is this quotation from Elizabeth Warren's recent book: "America's middle class is under attack. Worse, it's not under attack by some unstoppable force of nature. It's in trouble because the game is deliberately rigged."

These are different sorts of games-- Lila being a game of *everything*; Kipling's being a game of war; and Warren's being a game of finance and neoliberal policy-- however, they all have in common the quality of being games that participants are not *voluntarily* choosing to play for fun, rather being games that involve *involuntary* participation on the part of players. Many games are games we do not choose to play; likewise, many things we choose to play which we do not necessarily think of as games.

When Mattie Brice writes "i want to fuck the world when coffee at an unspeakable hour is fucking. when picking out a dress is fucking. when having sex isn't the only way to fuck. jogging together is fucking. discussing your mistakes is fucking [...] i want to fuck the world when **explicit consent** isn't just for sex but every type of relation," (*emphasis mine,* link) she is rightly celebrating both the voluntary/consensual as well as the radically open-form aspect of games(or 'fucking'), which makes them *good*-- but there are *evil* games, too, and these do not wait for consent, and we are drowning in them and drowning others in them every day.

We ought to enjoy cultivating an understanding of *games* and *play* that allows for inclusion of the most distant, expansive, and even oft-ignored but common-sensical usages of those terms, games played without consciously recognizing them as games.

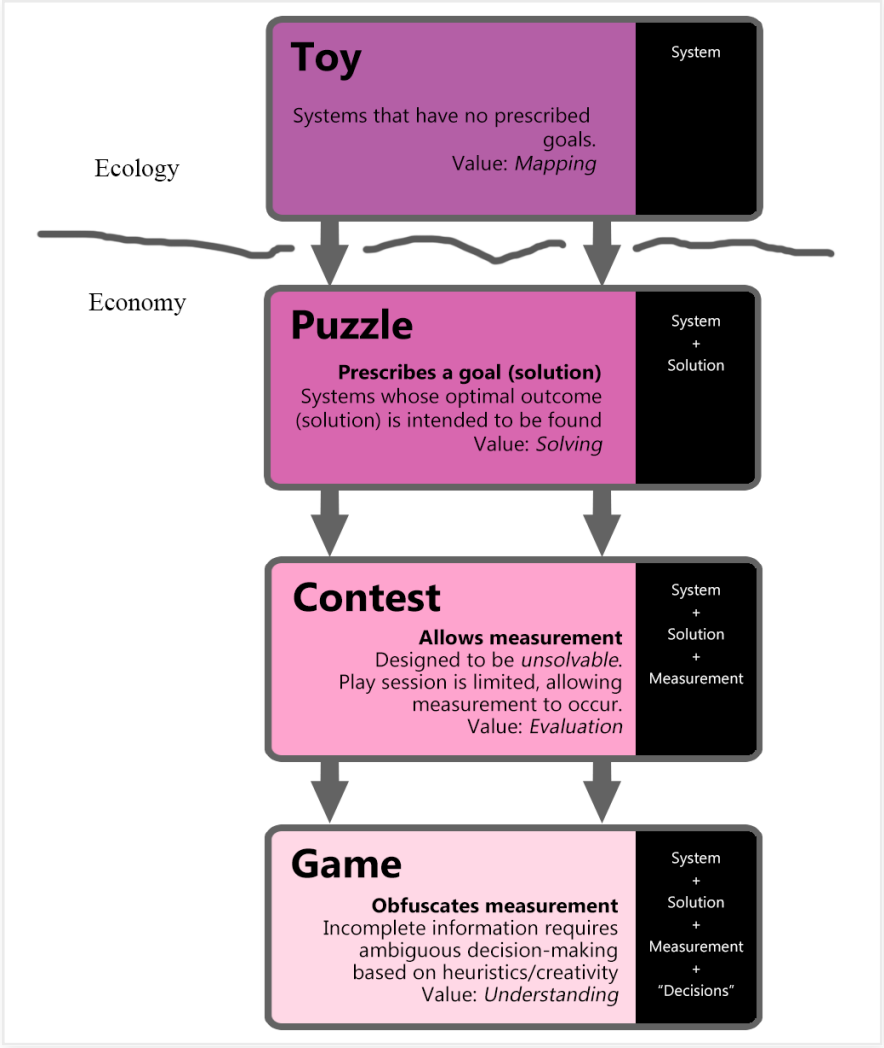
Consider the efficacy of the classic game-essentialist formalism in light of this goal of ludic realism:

If only forces are present without rules, the form being considered is not a game, it is a 'bare interactive system' or a toy.

It follows from this ontology that the Earth is a toy, that our body is a toy.

But these are not toys! We are *lives* ! *Players (Games)* !

3.



The Toy / Game language is inadequate.

There are better words on hand to signify the dualism of playspace-Form which has been roughly described.

These are *economy* and *ecology*.

What has been lately called 'ludo-centric' thinking (https://storify.com/landonscribbles/ludocentrism-in-games) is nothing more than amateur *game theoretical* analysis. Game theory can be considered alternately a branch of pure mathematics and/or an economic (pseudo-)science. It is a legitimate branch of pure mathematics because the forms it deals with are Real (at least arguably so) in the geometric-Platonic sense. It is a pseudo-science, because it is (patently) inadequate as a predictive tool, supposing as it does that all economic actors are rational agents.

Besides, whatever 'purity' game theory might have as a discipline of pure maths, it was indeed formulated as a practical tool-- described by Von Neumann and Morgenstern as "the proper instrument with which to develop a theory of economic behavior," --

And thus we are not stretching definitions to call the kind of thinking which deals with rules and goals (a goal being nothing more than a Big Rule as to which *end* following a cascade of bifurcations is to be felt as most desirable)-- *economic thinking*.

In many ways economic form deals with those components of a playspace which have no actual existence outside of rational player psychology. It is abstract and subjective.

Ecological form, on the other hand, is real in a physical sense-- it is independent of player psychology, it is concrete and objective, it is actual.

When there are *scarce resources*, ecological form can begin to take on qualities of economic form, and from this scarcity we derive the idea of e.g. evolution as an economic process as well as the *poetic economy* of making, for instance, a haiku fit the 5/7/5 pattern. This is a very interesting space in which the two concepts become intimately interwoven.

In terms of the interface between player and space, ecological form demands something other than game theory's rational agent models-- what it demands is in my view largely satisfied by the *ecological psychology* pioneered by James & Eleanor Gibson, developed by others, which is the source of the concept *affordance*, amongst other things. James Gibson's book The Ecological Approach to Visual Perception outlines this concept in chapter 8 "The Theory of Affordances":

> "The affordances of the environment are what it offers the animal, what it provides or furnishes, either for good or ill. The verb to afford is found in the dictionary, but the noun affordance is not. I have made it up. I mean by it something that refers to both the environment and the animal in a way that no existing term does. It implies the complimentarity of the animal and the environment....Let us consider the affordances of the medium, of substances, of surfaces and their layout, of objects, of animals and persons .... Air affords breathing, more exactly, respiration. It also affords unimpeded locomotion to the ground, which affords support. When illuminated and fog-free, it affords visual perception. It also affords the perception of vibratory events by means of sound fields and the perception of volatile sources by means of odor fields. The airspaces between obstacles and objects are the paths and the places where the behavior occurs .... Water is more substantial than air and always has a surface with air ... It does not afford respiration for us. It affords drinking. Being fluid, it affords pouring from a container. Being a solvent, it affords washing and bathing. Its surface does not afford support for large animals with dense tissues .... Solid substances, more substantial than water

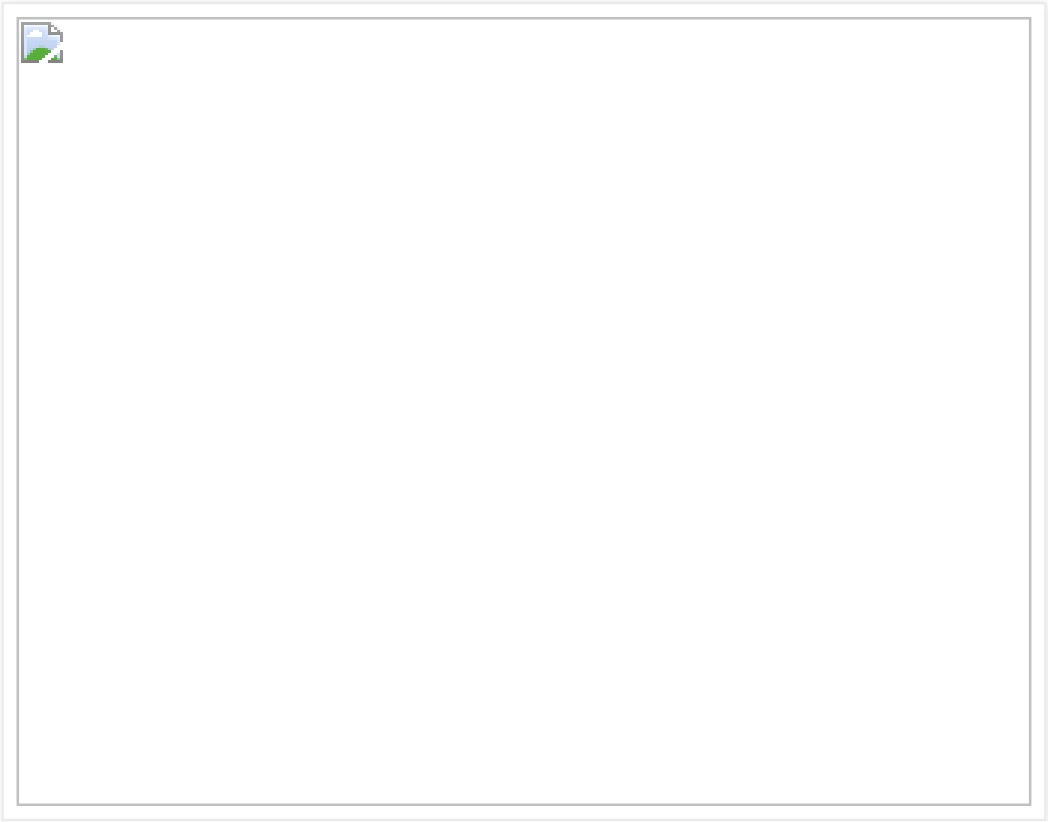
Economic thinking is the more suitable tool for analyzing a game of chess, whereas *ecological thinking* is the more suitable tool for analyzing something like mud-wrestling with a dog, or playing with a vaseline-lubricated watermelon in a swimming pool-- also, for analyzing the *ground* of computer games, once the concept of *affordances* has been hooked into Turing's description of the *c*-machine, it is possible to define 'interaction' in a way which is objective and not subjective.

At the very beginning of section 2, *definitions*:

> “If at each stage the motion of a machine (in the sense of § 1) is completely determined by the configuration, we shall call the machine an "automatic machine" (or a-machine). .For some purposes we might use machines (choice machines or c-machines) whose motion is only partially determined by the configuration (hence the use of the word "possible" in §1). When such a machine reaches one of these ambiguous configurations, it cannot go on until some arbitrary choice has been made by an external operator. This would be the case if we were using machines to deal with axiomatic systems. In this paper I deal only with automatic machines, and will therefore often omit the prefix a-.”

Interaction is not so fuzzy a concept, this is what is meant. It is a free variable *x* which is afforded to the 'touch' or 'choice' of a player.

4.



It is convenient that *ecology* and *economy* have a shared root in *eco-*

The etymology reveals a lot and in a way which harmonizes quite beautifully with this dualism.

Eco comes from the Greek *οἶκος*, meaning *household*.

“Playing house” becomes the new prototypical game.

Economy comes from Eco + *nomos*, meaning *management*, *law*, or *Rule*. Economy means “Rule of the household.

Ecology comes from Eco + *logos*, meaning *ground, word, reason, order*..

Indeed, in a game of Basketball, its system of *rules* is its economic component and the bounce of muscles and balls against the *ground* is among its most significant ecological components.

5.

In economics, we hear of macro-economics, and micro-economics.

Game theory is a model of micro-econonmics, concerning as it does the behavior of individuals, its fabled rational agents. The flux of global financial markets is an example of the sorts of things macro-economics deals with. The two, of course, are related.

For the purpose of our *ludic ecologonomy*, consider--

that micro-ecologonomics are BODY-centric,

whereas macro-ecologonomics are EARTH-centric.

Micro-ecologonomics are the manifestation of ecologonomic form, from the point of view of an individual body in general, and in our first-person experience of the environment, in particular. The study of computer games is a sub-field of micro-ecologonomics, concerned with the environmental relation between our body and machine and the software running on that machine. Stuart Kaufmann's "candidate fourth laws of thermodynamics" as described in his book *Investigations*, are micro-ecologonomic concepts, concerning as they do the play of what he calls 'natural games.' His concept of movement toward *adjacent possibility* which *maximizes its dimensionality* to reach *the edge of chaos* is a striking model of not only evolution and other biological phenomena, as he intends it, but also, of game in general, games which are not limited to be game theoretical games, but which are rather the sort that dogs might play in the mud.

Macroecologonomics is the study of global ecological effects, e.g. climate change, in relation to the global economy. The game of geopolitics, new trade deals , the upcoming attempt to negotiate a treaty in Paris, etc.

The field of 'ecological economics' is destined to deal with the specifics of the macroscopic with far infinitely greater nuance and efficiency than ludic ecolologonomics. Still, it is not a properly *different* field from the analysis of games that you are likely interested in if you are reading this-- it is not *alien* to the study of games, it is right at home, it belongs here, in the household.

It is my hope that a 'microecologonomic' study of computer games might aid in tuning into microeconomies/ecologies in general, and that tuning into these might aid in cultivating an interest in the bigger problems. More on this soon.....

6.

I've got a work-in-progress draft of a much longer essay on this topic, and if you'd like to dive into that, it's here: https://dl.dropboxusercontent.com/u/35767605/Ecologonomy%20Jan%2010%202015.pdf

I don't know if I'll return to it, or just move on, probably the latter!

I'm not so much in the mood to write these days, I might try out some shorter posts to expand the thinking here. I'm not too good at economizing my style, tho... keeping it from tl:dr

Posted by David Kanaga at 9:45 PM 18 comments:

Monday, January 27, 2014

Infinite Sketchpad / I Am A Strange Loop

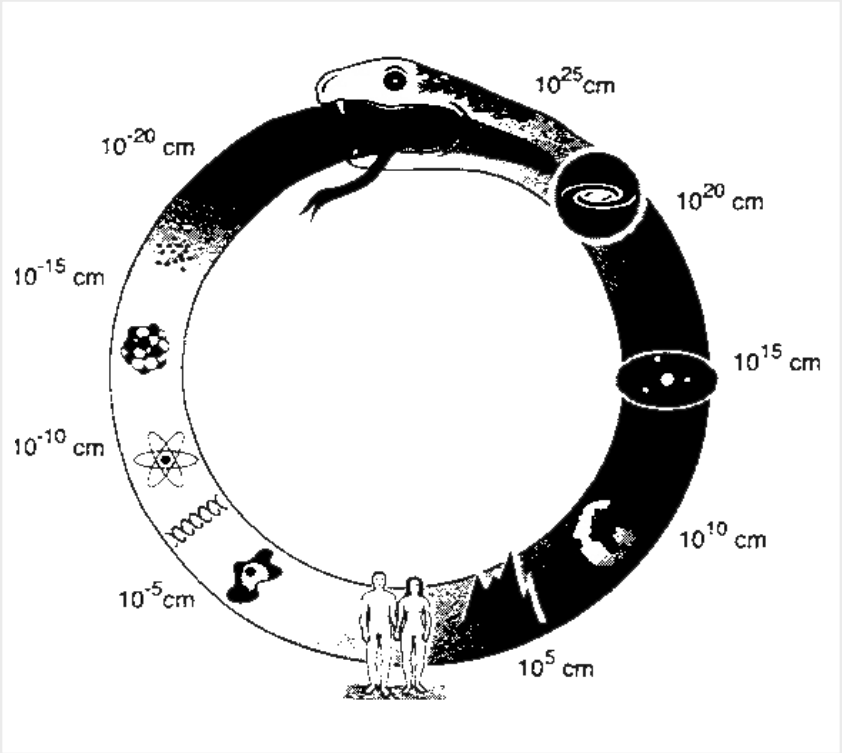
I.

"The Emerald Tablet of Hermes"
(Newton Translation)

~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~

II.

∞ ✎



In late 2012, I was introduced to Tom Lieber's *Infinite Sketchpad* (*many* thanks to Luke Iannini & Mike Rotondo for this!)-- it almost straight-away became one of my very favorite videogames & still is--

Get *Infinite Sketchpad* (∞✎) for iPad HERE.

Get David Johnston's *Infinite Doodle* for Windows/XBOX HERE
(very different touch/movement/speed (fast!); mostly same space)

See my drawings HERE.

The ∞✎ space is a visualized Real Number XY Continuum, or 'blank fractal canvas' (the real-number line is a fractal, too, only one of trivial visual interest until we start to fill it in with content). It is a model of Zeno's Playground, that 'flux/motion-disproving' space famously played by Achilles and the Tortoise in defense of Parmenides' eternal/timeless Sphere. "The Continuum Problem" has historically given rise to some huge moments in the history of maths-- from Leibniz/Newton's Calculus, and when re-problematized, to Cantor's Set Theory, and more recently, building from this, as the assumed 'monstrous grain' of the *strange* infinitely detailed *fractal sets* described by Mandelbrot's free-scaling geometry.

But none of this history need come up while playing. As described above, *Infinite Sketchpad* sounds like an esoteric tool, accessible only to mathematician-initiates, opaque to everyone else-- this isn't right, though. In actuality, it's probably much more suited to please the changing whims of irrationalists, luddites, non-gamers than the structured pursuits of formalists... All the *ideas* are FELT as *wonder*, it's all,play-- requiring no systems thinking, little design. Just wandering... It is *immediate*. You need only to play it yourself to meet this quality, its personality, it doesn't require any theory, it barely requires any gaming 'literacy' (drawing-literacy & ipad zooming being the closest it comes).

For my part, it was basically the only videogame that I touched for almost a year...When I first played, I knew very little about the formal concepts of *infinities,* etc. that composed its conceptual/functional-material-grain, but it was clear that they were there, and it was easy enough to smell out a Borgesian canon-labyrinth of thought surrounding the mechanics and pictures as gradual intuitive understanding developed. It was exciting *not knowing* (not being able to formulate) things about the space, but still *playing* it, and coming to *know* it in a different sense, a *non-explicit (non-propositional)* kind of knowing/p-o-v.

I started writing notes for a blog-post on it to share my excitement, and soon it grew out of control...

The form is telling-- in the same way that infinite sketchpad allows us to zoom in and out and pan as much as we'd like, the 'blog-post' balloon-zooms in/out/across accordingly, and the ballooning very soon is too much to handle, especially once I start supplementing the canvas-play with external research (which feels *necessary* from very early on, given the historical-conceptual contexts of the ideas I.S. touches on)... I am learning to compose pictures within this new sort of space, and am writing at the same time-- the sensory-material potentials of the former process are informing the abstract-structural-linguistic potentials of the latter... There is the 'drawing plane' and the 'reading/writing plane' and the project becomes a a matter of seeking and describing a continuity or consistency between the two planes (and between these & the many other planes which are likewise touched).

Finishing the essay becomes a *GOAL*. When I set out, all I wanted to do was write a little critique of the game, but I kept finding all of this *context* that the critique seemed to require if it was to be meaningful in the sense that I had felt it to be during my initial encounter.

This goal is still unmet, incomplete. Every time I go through to edit, I want to add more, and when I add more, it's a mess, and I need to edit. There are 'subtractive' and 'additive' methods of composition, and though I've submitted myself at times during this process to both, the *growth* in its size is proof enough that the latter was a dominant controlling influence. After all, I never really 'delete' things in an *Infinite Sketchpad* picture. There's always more room! Games teach us how to play within their

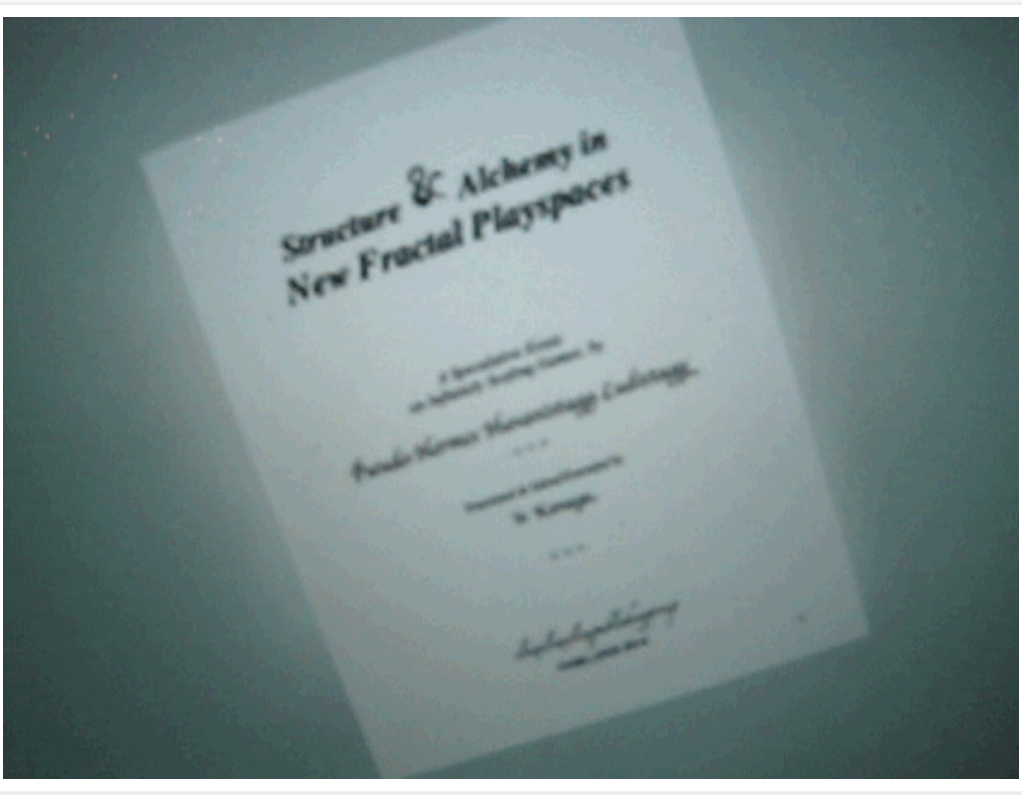
own frameworks *and we carry these 'ways' over to Other games,books,things,life,etc.* Living with *Infinite Sketchpad* cultivated in me a pathological *burrowing* aesthetic of sorts. This aesthetic seems to have occupied *in feeling & intention* many similar spaces to those that the 'pathological curves' (proto-fractals, monsters) of the 19th century occupied *in mathematical form*.

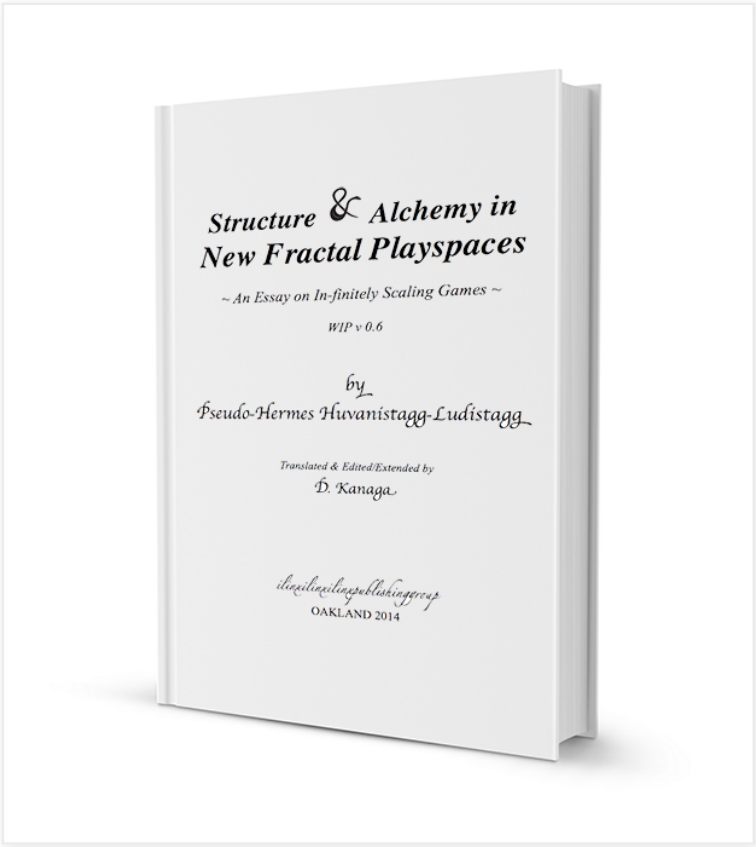
Needless to say, writing & drawing has felt something like the beginnings of a potentially infinite project, paralleling the structure of the game.. Fully submerging myself in that process for even another month is not something I'm interested in giving myself over to, as the endless tunnel of research has proven to keep me from other interests and work and from the joy of completing small projects. I was not prepared for the gravity what I embarked on, and though I'm very happy with the time I've spent on it, it's time to PAUSE or ESC the game for the time being (hopefully to return to finish the final chapter, at least, but we'll see...).

I've loosely tightened the essay up these last weeks, clipped off (some) rough ends, and have made it available as a first complete draft, which may or may not be a final draft, depending on how I'm feeling in the future:

~~~~~~~~~~~~~~~~~~~~~~

III.
Structure & Alchemy in New Fractal Playspaces, v 0.6
~~~~~~~~~~~~~~~~~~~~~~





DOWNLOAD PAGE

These essays are personal notes, a year or so of what might have served as Content on

this blog, hoarded, cut, and re-composed in a single document instead. I have tried to be as truthful as possible. I have sampled many sources, some uncredited, usually on account of lazy book-keeping. Any of the writing's formal integrity is thanks to the bevy of samples of Pseudo-Hermes Huvanistagg-Ludistagg's work, an old ludic realist-materialist who I've given primary authorial credit to, though the less refined passages throughout are always my own.... Pseudo-Hermes is presumably named after Hermes Trisgmegistus, the first alchemist (with P.H. adopting the medieval scholastic naming convention, a la Pseudo-Dionysus, Pseudo-Aristotle, et al). The essay's historical ambitions, guided by P.H.H.L's alternate 'play canon', plateau at a still massively underdeveloped reevaluation of the epoch which immediately preceded our own 'scientific modernity'-- one in which Galileo, Newton, etc must be revisited & re-considered just as much as practitioners of intuitive magics (*alchemy, astrology, qabbalah,* etc.), as practitioners of the strict 'rationalism' we know them for today. At this pre-modern moment, the *object* of scientific inquiry is not separate from the *subject* of personal inquiry, feeling, affect-- *speculative interest*.. this is the meaning of magic.. It is my belief that videogames are irreducibly *pseudoscientific,* being composed of such subject-object dissolves, and that failing to account for their status as such will only serve to cut off those speculative possibilities best prepared to *advance* the medium. Hermes is a *line* back to the time and ethos of the *protosciences* ('pseudoscience' was first used to refer to alchemy)-- the *conditions of modern science* -- the *primordial soup* from which the functions and concepts of which we are so proud and confident were given their first breath of life. Modern science, proud as it is, must give due thanks-- it did not birth itself but is rather a child of the magicians.

I can't say any longer that the essay's purpose is simply to celebrate/critique *Infinite Sketchpad* (though I hope it opens a way of thinking that could be more readily excited by the possibilities that I.S. presents). Instead, while *Infinite Sketchpad* serves as a materialized (vibrating) *model* of the spaces discussed throughout, the topic of the essay has rather undergone a massive zoom-out to the point of being concerned with the infinite macrocosmic canvas of Games as a Whole, their *playings* microcosmically represented by 'paths' walked through infinite sketchpad-- infinitely scalable approaches to the questions of what games are, what they've always been, what they might be... these are the 'boring' questions of last year, 'What are game?' etc, but the *battle* over the *use* of these terms is by no means complete.. The relations between gamefulness and artfulness and playfulness are by no means well understood, and the prophetic power of the *notgames* idea has not at all been exhausted. Notgames have their formal structures, too, and I am interested in exploring them. Why? *I often do not enjoy games that present me with an explicit goal*. I like to *wander* with whatever it is I am doing, to *shift* the goal. I like to *lose* if this allows me to shift-- I like even to spoil a game for others, to *grief,* for this same reason (I apologize!). I have on many occasions found *looking at a picture* to be a better Game than most videogames. For me, games are all about *touching*, affecting, but the eyes can touch, too.

The essay has become an anti-formalist formalism in a way, an attempt to defend the irrational, the inconsistent as manifest in games-without-goals (which really have

many goals rather than none), and in the sensuous/haptic aspects of games, which some are inclined to consider 'less intelligent', but which are rather simply *irrational* in something very much like the numerical sense, in that these are the games that exist *between* the members of the infinitesimal series of rational numbers/rational games, which condition our reality at every moment even as we 'hop' from one rational game to the next (as we lose, grief, etc.).... This is to say that it is possible to play *even* a rational game irrationally (as is the nature of 'non-optimal' play). *This capacity* of the player is what I am most interested in, which puts me at odds with the conventional computer game-formalisms, from what I understand. I'd been calling *Infinite Sketchpad* a game, and I still do, but it can be considered as such only if *irrational games* are allowed to exist. Needless to say, the Pythagoreans *were not pleased* by Hippasus' discovery of irrational numbers, and despite a handful of exceptions to the contrary, it seems that the mechanisms of Game Culture are not liable to be pleased by an insistence of the *material primacy* of irrational games, or by the corresponding principles of *ludic realism* that parallel the pathological realism of the Real number continuum--

That there are indeed infinitely many rational games, but that in between each of these games, *there are infinitely MORE games which are irrational.* That *almost all games are irrational.*

/\

IV.
Atalanta Fugiens 1 -18

Atalanta Fugiens 1 - 18 download share

by Michael Maier, RIM c-Orchestra

1. 1-18 00:00 / 20:29

V.

8 Theses on ∞ ✒

Since I realize that very few readers will click through to read more than a few pages of the essay and that fewer still will read the whole, AND since even in its finished state the essay gets carried away with itself and the applications of infinite sketchpad gets lost in the mess of things...-- I'd like to present just a few numbered theses here which are directly related to the game itself, not drifting away from it so much as the essay does, but rather summarizing some of the key ideas that I have arrived

at while playing/writing, as a standalone mini-essay and preview of the larger project.

The full essay is a piece of 'game criticism' on Infinite Sketchpad only by an analogical leap/stretch of the imagination-- the below points more clearly so.

1. Properly acknowledging the nature of scaling relations in *Infinite Sketchpad* drawings warrants a re-evaluation of *fractals* such that the category is opened to include not only scaling objects generated by algorithms, but also scaling objects generated by a constant stream of *finite* PLAYED material actualities the sources (players) of which are *potentially non-computable*. Such an inclusion allows for the completion of Mandelbrot's *Naturalistic* project

The calculation of Mandelbrot's variable D, the *fractal dimension*, operates on the assumption that a scaling self-similarity will cascade into further detail infinitely, it supposes a wholly *abstract* image of space which does not fully correspond with out own. But this has not stopped Mandelbrot from applying this abstract model to concrete-finite actualities in nature, art etc. D is already famously applied to finite-natural pseudo-fractals like the British Coastline, which was not generated by an algorithm, but rather by the MATERIAL PLAY of waves, of tectonic movements, etc. His whole book *The Fractal Geometry of Nature*, is concerned with other non-algorithmic fractalish things which were *played* by nature, and then abstracted & modeled algorithmically.

The fractal geometry of nature points the way toward a new class of proudly *finite* fractals. *Natural fractals are all finite*. What there is of the infinite is to be found *within* the finite. And insofar as an artwork can be considered an extension of nature (the player or artist and her environment is the system of waves shaping the shoreline), it only makes sense to apply Mandelbrot's mathematics to pictures such as these. Mandelbrot was already onto this idea, as his paper "Scaling and Scalebound structure: A useful distinction in the visual arts" can attest to. In *Infinite Skethpad,* we may not have *strict* self-similarity, depending on what the player chooses to draw, but *similarity* and *difference* are BROAD categories, and it ought to be possible to delineate scaling relations between, as it were, pattern and entropy, as regards *whatever* information we're presented with.

2. Infinite Sketchpad is both the most radical and most intuitive dimension-shifting game that has been made. [a] It is the most radical because it is concerned with *surfing a continuum of floating point/irrational dimensions, as opposed to 'snapping' between integer dimensions* (as per #2); [b] it is the most intuitive because it manages to *shift dimensionality* all while remaining a strict 'virtual parallelism' to the 2-dimensional material of the screen itself-

> Charles Sirato's 1936 "Dimensionist Manifesto" might provide a fitting generic term for games of wonky shifting dimensionalities-- *Fez's* move from 2 to 3 to a different 2. *Miegakure's* move from 2.5(ish) to 4(ish) (ostensibly a movement from 3 to 4). Etc. *Braid* moving from 2-D space + 1-D time where time is one-directional, to 2-directional 3-D spacetime.
>
> If we follow the logic of the classic dimensionist book *Flatland*, in which a sphere penetrating the 2-D plane is perceived by locals as a a circle which grows from small (at contact) to large (at sphere mid-slice), then it would suggest that games in which *scaling objects* are prominent characters could likewise be considered 'dimensionist' games-- for instance, *Katamari Damacy, Scale* (forthcoming), *Within A Star-Filled Sky, Maquette, Gorgoa, Google Earth, etc.* Each of these games is a game of N-dimensions penetrated by objects of dimension N+1 projected downward onto the lower plane.
>
> *Infinite Sketchpad* is quite strange in that the spaces we draw in it are always effectively BETWEEN 2 and 3 dimensions-- but unlike the above-mentioned scaling games, I.S.'s spaces dimensionalities are in constant flux, the value of D is constantly changing-- e.g. 2.1, 2.2, 2.23, 2.8... Detail which doesn't tunnel into further detail is representative of the side of the continuum nearer D=2, while detail which tunnels *deeply* into further detail is representative of the side of the continuum nearer D=3. The fractal dimension *D* on this plane is always $2 < D < 3$. The zoom characterizes the possibility and *actualization* of an infinite line on a finite plane such that the (2D) *surface* is effectively *becoming (limit 3D) volume*.

3. Following from its capacity to freely navigate the strange dimensional continuum *between* D=2 and D=3, something very much like Infinite Sketchpad will be an invaluable aid in prototyping any future-videogame ideas of sufficient free-scaling complexity.

> If more games (software-spaces in general) are to made where objects contain entire spaces, and where spaces can be fully encapsulated as

objects, and where there is to be a potentially infinite cascade of such zooms in and out-- *planning & playing* in a tool like *Infinite Sketchpad* will be essential. Such a tool can (and will) be amplified by new Forms of Life, no doubt, but the basic idea of freely composing a Great Chain of parts and wholes irrespective of an algorithmic top-down will prove powerful in the years to come, if the intuitive bottom-up is to be joined with the Universalizing potentials of speculative abstraction.

Infinite Sketchpad allows such abstraction to be explored smoothly. Smooth like pen wandering on paper. Smooth like pressing into butter, or some other 'spreadable' sensitive substance. Smooth like *smooth functions*. Smoothness is *Realistic*. Continuity is realistic. This is part of why *Half-Life* is so beautiful. It is a continuous stream of synthetic consciousness, straight-up. You start on the tram, and everything follows from what precedes it without gaps, there are no substantial 'edges' to take into consideration. Life is continuous (save sleep, hypnosis, and other strange edge-states). To create a smooth scaling space where objects are always spaces and spaces are always objects is merely to take this principle of 3D spacetime realism and *amplify* it. The capacity for smoothness in a scaling space allows that part/whole object-relations need not be overly simplified-- it is possible to draw cascades of entangled objects in *Infinite Sketchpad* of the sort that it is difficult to say where one ends and where the other begins. Object-hyper-object-hyperhyperobject-hyjectperobbbb,he etc... The 'count as one' replaced, as often as possible, with the 'count as what?' (inconsistent multiplicity).

4. The depth of scale and the scaling *drift* required to 'visit' (in time) all of an *I.S.*-picture complicates the as-yet little interrogated 'edge' between videogames and *pictures*. Pictures in I.S. are undoubtedly pictures, but they also seem to be little *adventure* games, too, *explorations*, as deserving of that title as any other... Videogames and drawings/paintings/images-in-general must be considered as existing together on a continuum with their distinction characterized by a difference of degree, rather than one of kind.

These are *drawings*, but they are *shifting possibility spaces* (or games) just the same, in our experience and in their material constitution. Pictures, of course, have always been shifting possibility spaces in our experience, but a new *material principle of relativity* is introduced here, whereby the whole and parts are more distanced from one another than they have ever been.

Following up on the implications of the picture-game continuum requires stepping outside of *Infinite Sketchpad*, and revisiting wholly 'static-flat' drawings with the new *sense of possibility* that I.S. has instilled in us.

Now, there is a clear sense of *preparing to zoom into*, e.g. Kandinsky's free-scaling Compositions. Clumpings of details function as *attractors* for our attention. Our eye follows details, and enters new (faster) rhythmic spaces in those detail-basins which feature objects more densely packed together. Infinite Sketchpad *automates* the possibility of tunneling endlessly into such detail basins, allows K's Compositions to *unfold*. Paul Klee's *Notebook's* will be a good place to steal game mechanics from, once we are comfortable abandoning representational design in favor of pure *concreteness / synthetic-vibrational player-materiality*.

5. The *shift* of scale initiates *rhythmic-musical flows* as much as it does drifting-ludic flows, and thus infinite sketchpad must exist on a continuum with other *music objects* as much as it does on that with other *picture objects*.

There is no *sound* attached to these rhythms, so we are still dealing with strictly visual music. Rhythm exists even in classical pictures, but now there is a new physical time element (this, despite the 'static' form of the pictures), whereby the density of objects dispersed around a basin of attraction creates relative pulses, where higher density is faster, and lower density is slower. Size itself is rhythm.

There are many scaling aspects in music. The classic example is a pulsing rhythm which, when sped up beyond a certain threshold, we begin to perceive as a tone. 2:1 is octave & boom-chick-boom-chick both. 3:2 is fifth and duple-triple polyrhythm. We can imagine (and maybe it has been done) a space which plays with e.g. duple-triple rhythms using tones that have been generating by speeding up this rhythm itself. And this is to list only the first 2 pitch-rhythm members of the harmonic series of integer relations, which continues scaling *up* (in frequency), *down* (in wavelength/time), etc... All of this is ancient-- there are more modern, computational devices, too-- Granular synthesis comes to mind. The shepard tone comes to mind. These & other musical-mechanical devices could be used to produce wildly dynamic soundtracks for new games which use free-scaling mechanics. And to this end, it will be as much a matter of developing a taste for these new sound-worlds as it will be one of actively *designing* with them.

It is not clear exactly what the relation between scaling musics and scaling pictures might be, but the 'continuum' of musical form outlined in scaling theoretical works such as Adam Harper's *Infinite Music*, James Tenney's *Meta-Hodos*, Erik Christiansen's *The Musical Timespace*, Curtis Roads' *Microsounds* etc will be of great use in exploring the possibilities...

6. Infinite sketchpad's emergent relations between parts and wholes ties the 'problematic' of drawing/composing in an infinite space to some of the classical problems of metaphysics.

Metaphysics seems to deal with games played collaboratively by a relatively small list of 'conceptual personae', several of which are key 'mechanical personae' in Infinite Sketchpad-- Parts and Wholes, the One and the Many, Process & Object... These concepts are all unavoidable in any attempt to describe what something *is*, what it is *becoming*... (etc!). Metaphysics is a 'gateway drug' to mathematics. These Problems more or less all follow from the *play* of Zeno's paradox, the famous formulation of the "Problem of the Continuum", which is reducibly mathematical-technical in one sense, and irreducibly metaphysical in another. Is there *flux-becoming* or is the *form-being*? And *what* is the relation between such pairs? Leibniz' work on the 'labyrinth of the composition of the continuum' produced the infinitesimal calculus alongside Newton's. The continuum is a *labyrinth* precisely because no matter how much you divide and divide into infinity, you are still only producing *rational numbers*. Between each pair of infinitely small rational units, there are infinitely many *irrational numbers* which have still not been touched. These irrationals are the seat of the proper *smoothness* or *continuity* of the continuum. Calculus does not solve Zeno's paradox, it merely *asks* it again, and makes something useful from the question. Over a century later, Georg Cantor's study of irrational numbers develops into his transfinite theory of infinities (irrationals requiring infinite calculation to describe), which describes the split between countable-digital infinite (rationals) and the uncountable infinite (irrationals and beyond--approaching--> Absolute/Inconsistent Infinite--God). These studies were also the beginning of his set theory (which is the count of a Many into a One). Meanwhile formal logic (non-electronic videogames) is being stratified by Frege, next Whitehead & Russell will attempt to map maths on logic onto one another and Gödel follows up eventually with his incompleteness theorem, with its discoveries surrounding *inconsistency* and this is Hofstadter's pet project, the Strange Loop, the tangled hierarchy, the part that contains the whole. This looping form, snake eating its tail, has also been called the Ouroboros by the alchemists.

Inconsistency. Irrationality. Infinity. THESE mathematical qualities which are, at some value-limits, NOT computable-- the problem of the continuum sheds light on them, and Infinite Sketchpad sheds light on the problem of the continuum.

> I ran into this little bit from Raph Koster: "It may be that games are all about math. And I think that sucks." But this sort of sentiment is a shame! Why does this suck? The thinking, I imagine, is that if games are all about math, they can't be all about Art, but to hold to this is to think too little of math and art both. Freely allow mathematics to breathe metaphysics. Is it, has it ever been, anything more, or less? Attempting to allow a maximally intensified/living Art to coexist (become One with?) a maximally intensified/living Maths is *the most promising project of videogames*, as far as I'm concerned. A new kind of Hippasusian-Pythagorean approach is wanting, where we DO NOT think that it *sucks* for games to be all about math, because math is *not* regarded as over-rational reductionism but is rather, as it has always been, the formalization of the *players* of metaphysics itself, the One, the Many, the parts and the wholes, the rationals and irrationals, and their relations and inconsistencies-- the games that they play.

7. Building from #s 3-5, It follows that software structures ought to be thinkable as elements existing on a continuum which likewise contains metaphysical structures, musical structures, pictorial structures, etc. This is maybe something akin to what Deleuze calls the Virtual Continuum.

> There exists some sort of vast N-dimensional Real continuum that can count *games, pictures, music,* and *philosophy* all together, each freely able to appropriate structural 'tactics' from the next. The way Herman Hesse described his imagined "Glass Bead Game" plays out similarly. And though this continuum counts the supreme *consistency* of software and its wholly rational numerical composition as part of its ranks, it reaches beyond the computable, too, touching the inconsistent, the irrational, the infinite-- this is no different from the Real number continuum itself! And this is the space (to descend fully into pseudo-science), between each of infinitesimals, which the language of the arts might operate in, such that the *meaning* of a picture, a game, a piece of music, a concept-- this meaning will both *touch* (being conditioned by) and be inconsistent with (being unbounded by) the information structures of software itself.

8. Since 'ideas' of some sort (Whitehead's 'eternal objects' reduced to structural consistencies) can exist as structure encoded *in* the computational material and outer flesh of the software as much as in our nervous system/human brain, and since it is possible to learn *from the software as teacher*, the relationship between mind, body, and world is immediately complicated, where each seems to be implicated in the next, where Mind can *and does* exist in the world just as much as in the body.

But this is not so simple as to say that *we ARE computers*. That thesis is up for grabs... this is rather to say that *we live WITH computers*. And that we *think with* and in many ways *are* what we live with. Tool-Being. Mind is *distributed across the environment*.

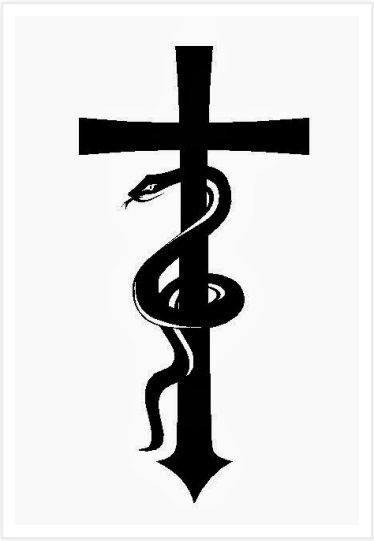
"Radical embodied cognitive science" is probably the discipline these days which is doing the most to shed light on this point of view. It is, as it were, a borderline alchemical mix of eco-psychological behaviorism and cognitive representationalism via Merleau-Ponty body-phenomenology..

This thesis that Mind exists dispersed throughout the whole environment, of course, can be applied across the board to any and all videogames, insofar as we enter the game and the game enters us, but I have found infinite sketchpad to be a particularly good example, partly because of the grandeur of the ideas which it touches on, and partly because I spent so much time following trails it seemed to lay out for me to learn from. I went to school *with this Mind*..

In Jung's description of alchemy, the individual's Mind is 'projected into the materials' -- Radical embodied theories might allow for an understanding of such 'projections' that they are not ego-centric 'illusions,' but rather Real bonds of relation, World-Mind, connections in aesthetics and causality.

The alchemist's Art of Memory (see Francis Yeates) does not discriminate between matter and memory. Matter outside the body is just descriptive of memory structures (RAM) as is matter inside the body is (Brain), . Memory, and mind in general, permeate the environment, chaos-cosmos. The contemporary obsession with Enlightenment materialism and its metaphysics which is at all times wholly reducible to quantified observation has proven itself powerful. But it did not *grow itself*. "In order to understand our situation today we must understand that in the sixteenth and seventeenth centuries the educated section of wester Europe inherited the results of about five centuries of intense speculative activity" (Whitehead, *The Function of Reason*). The question-- do we proceed with this 'objectivity' that seems to have been *won* from the Game of the proto-sciences which culminated in the proud, modern discoveries and systems of Galileo, Copernicus, Newton, etc? Or do we go back and figure out *what games were played* for those five centuries that allowed the conditions of such *wins* to be possible in the first place. As happens again and again, the Problem loops back to the question of whether to prioritize the Object, or the Process. The revisitation of history will be an invaluable tool in reclaiming faith in a self-destabilizing *object-Idea* of irreducible Process itself.

If *Infinite Sketchpad* is not composed of *some kind of Mental Stuff*, then it seems to me that whatever mental stuff actually *is* composed of perhaps ought not hold such a tight monopoly on the 'limits' of thought and experience as we are so often inclined to think.



Posted by David Kanaga at 4:05 PM 1 comment:

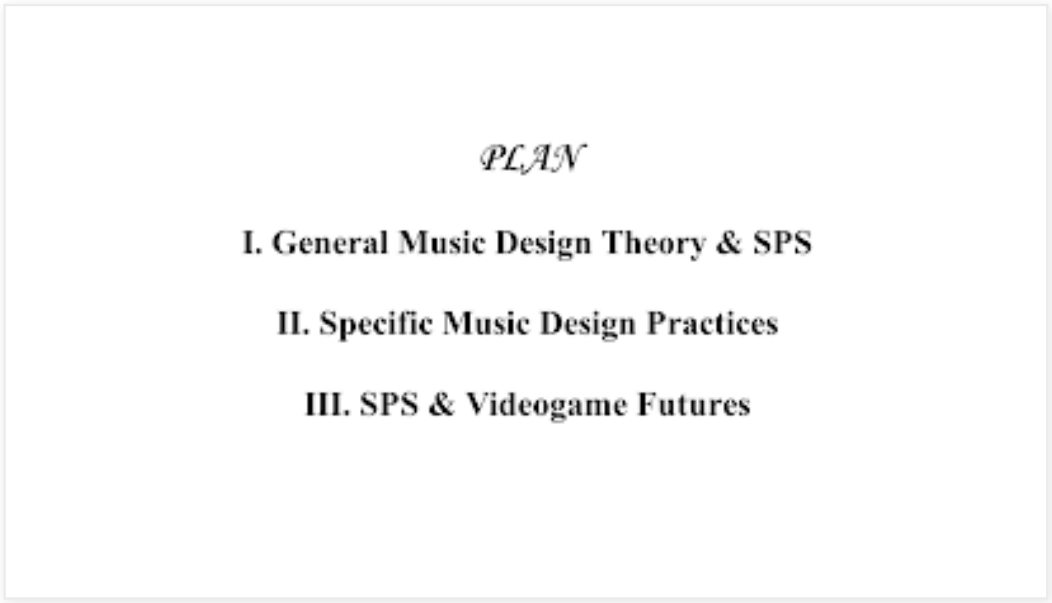
Tuesday, November 19, 2013

Music & Games as Shifting Possibility Spaces

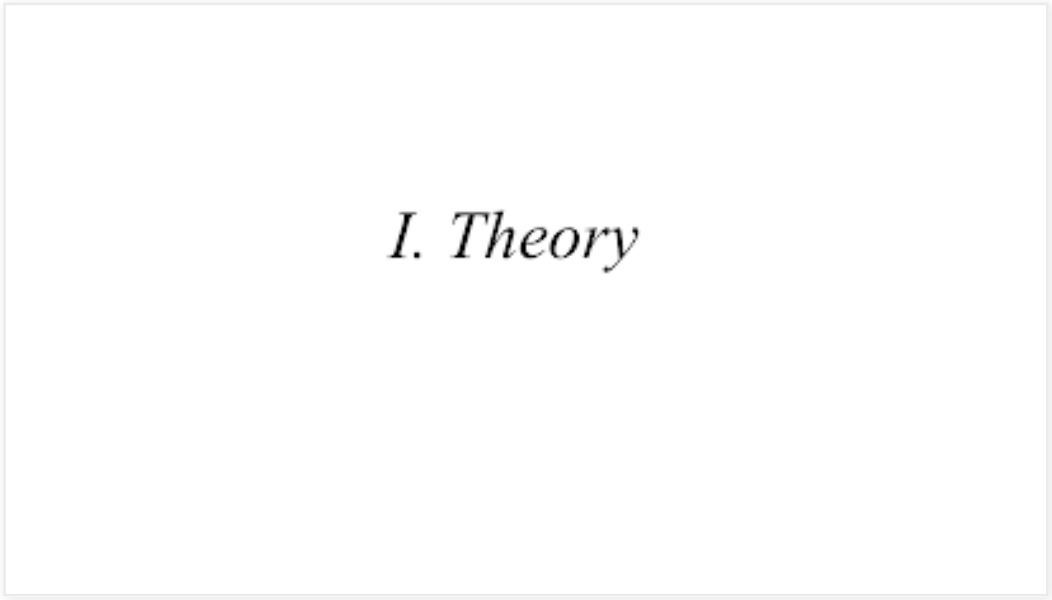
I gave a talk last week in Montreal at MIGS, which followed this outline. The points I spoke about were more or less improvised within this framework/sequence, and I'm going to do the same thing with writing now, which is likely going to tunnel some ideas into a less conversational/more solipsistic hole, with things that i could write but might not say.... ohhh, etc.--

in any case-- annotations follow each slide, hoping to clarify them-- in general, hoping to to share some useful *tactics*.

MUSIC = GAMES. My work with music designs, which is what I often call the work I've done in games, has more or less followed this assumption at every step. The belief, or working hypothesis, that there is an identity between music and games as played structure.. Or more accurately-- that it is possible to *construct* an image of such an identity, the discrete concepts (music, game) themselves being 'meaningless' before they are played in this or any other construction.



I. Trying to find the IMAGE of the music/game identity
II. Lessons learned from specific games.
III. Future directions for research



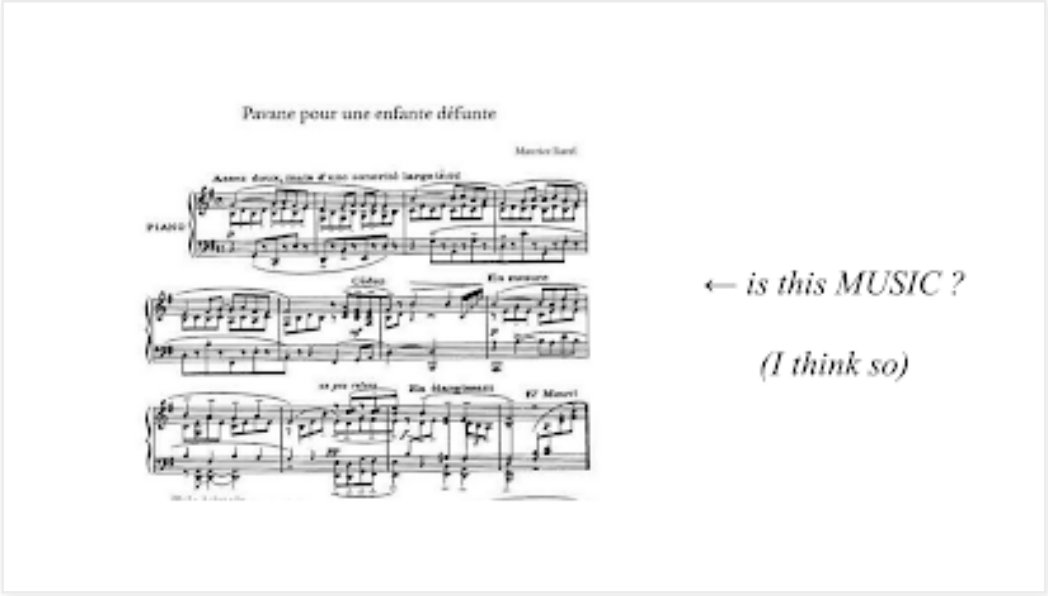
~ ~ ~ ~ ~ ~ ~

RULE-of-THUMB / DOGMA ~~~~~ This is KEY ! The precedence for this statement is pretty huge, from the Pythagorean musical-numerical cosmologies (which consider the scaling categories COSMIC music, HUMAN music, and INSTRUMENTAL music-- only the last of which we'd still call by that name), thru all the hermetic tendrils that have flowered out of them..

Adam Harper has written on this here (http://rougesfoam.blogspot.com/2012/06/musical-radicalism-beyond-sonic-talk-at.html), and when the non-sonic image is kept in mind, the beautifully described 'progressive differentiation of Music Space' in his book *Infinite Music* starts to conceptually bind with the progressive differentiation of everything, more or less, a new Pythagoreanism for today, based on *difference* rather than identity? New geometries-- scale, paths, wiggles... Recalling some of the more old-fashioned understandings of what music is. Robert Fludd, old English alchemist, writes that:

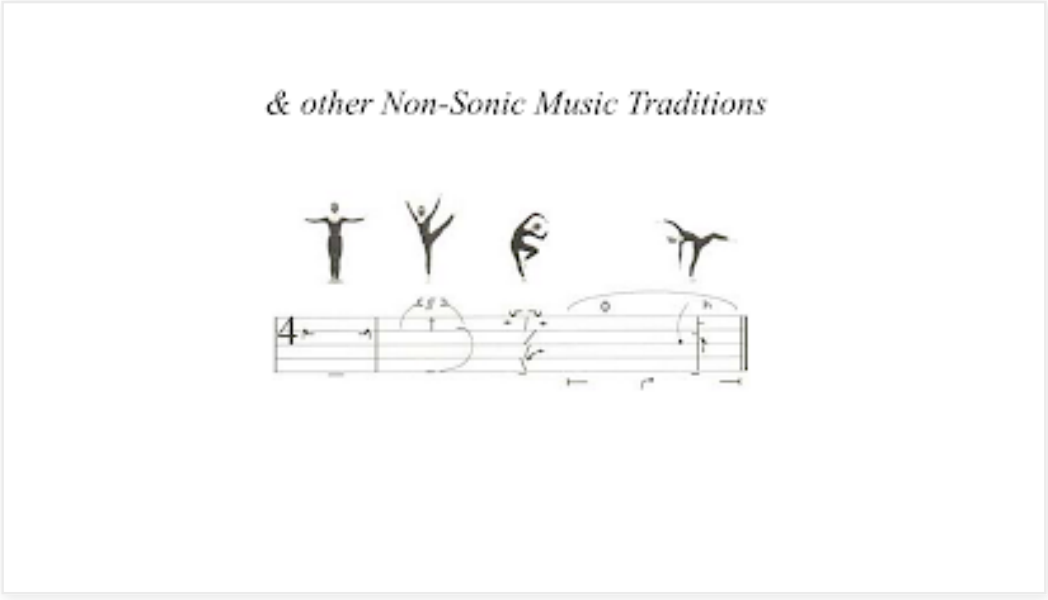
> "Music is the knowledge by which all worldly things are joined by unbreakable bonds and by which like is related to like by equal proportion in any object. This definition fits *musica mundana*, *humana* and *instrumentalis"*

I like this! That music is the *connective* tissue of things, the principle of *composition, assemblage* considered broadly. The ground of things, insofar as Aleister Crowley's equation 0=2 can be read as ground...



But even without going into cosmologies, the simple existence of musical scores puts our belief in the primacy of sound in music to question.

Old men who are into musical aesthetics are very concerned with *The Musical Work*, which is this more or less wholly computable string of information that we are given in the score^^. There's the *work* and the *performance*, which are tangled but discrete, and the Work somehow manages to exist independently of sound-- this, regardless of whether it's intended to eventually guide the production of sound or not.



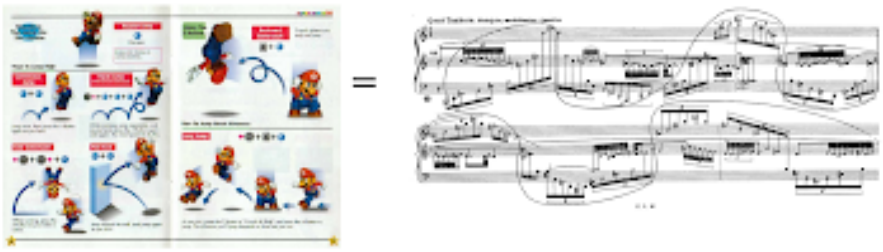
Ballet, too, considered apart from its 'soundtrack.' simple dance choreography above. I remember hearing about John Cage / Merce Cunningham collaborations, and how they would often work on the sound & dance components independently and then just sit the pieces on top of one another, letting chance decide the audio-visual-haptic synchronicities, letting the musical connective-tissue just *happen*, being receptive to the mutual creation of juxtaposed parts, each already complete unto itself..

This is a painting of Wassily Kandinsky's. He was always quick to call his work music. ~ ~ In his theoretical writings (*Concerning the Spiritual in Art, Point and Line to Plane*) he regularly references the *sounds* of a picture, which are lo, hi, bright, dark, wet, dry, etc-- he was a famous *syntesthete* but it shouldn't be thought that he had a special capacity for the blending/dissolving of the senses that others aren't capable of. Instead, his work can function as a *teacher* for us-- i.e., PRACTICE: allow the line connecting our pupils to the picture to be the 'avatar' or 'player character' in the playspace. "Line of sight", "Line of attention", etc... Drift *intentionally*, from one spot to another, and feel the light-affects change as zone of the picture you are focused on comes in and out of focus. The matrix in the upper-left corner can be massaged with the eyes somewhat, like flicking fingers through the teeth of a comb-- brlrlrlrlrlrlr -- rhythms slowing down some as gaps between lines increase, speeding up as they close together-- maybe pitches changing likewise (faster rhythm = higher pitch, when *zoomed into*). Looking at other sections may feel totally different-- colors to me often feel more like harmonic zones, whereas lines feel like rhythmic contours. It is worth spending some GOOD TIME with these pictures, like the amount of time you might spend with a little flash game, and to drift through them and feel the music/affect of the different points and their interrelations (recalling Fludd's definition of music).

Working Hypothesis #2

ANY existing game time-structures can be 'read'

as a SILENT piece of music / musical SCORE



So, this is the music design TACTIC that the last hypothesis prepared the ground for. Just like we were starting to *read* Kandinsky's picture as a score, and just as we could do the same with dance notations-- it is possible to read ALL GAMES as dynamic scores already complete with the necessary time-structures, rhythmic information. The picture above is a clipping from the mario 64 manual, showing a handful of the core jump-mechanics. Anyone who has played can recall the different rhythms of different jumps. The triple jump, for example, where the rhythm is elastic-expansive, air time increasing with each additional hop.. Rhythm looks something like J - - , J - - - - , J - - - - - - - - ..... Where "J" is for jump, and the dashes are airtime. It would be *possible* to create a spatialized notation of interactions in a game in this way, even if a bit absurd, as we would quickly require many more than the 2 dimensions that the page allows for, if we wanted to account not only for the time-structures of isolated interactions (which may often be accountable for using only 1 dimension, the *path* they follow), but also the more important *combinations* of mechanics that emerge in play, which will require a stacking N+1 dimensionality.

In any case, just based on the sequence of events and processes in a game and how these relate to the broader space of *all possible sequences* --from this, we are given the new 'meter' of game design, which has little to do with the evenly divided 4/4, 3/4 etc of much linear music-- rather, composed of metric 'downbeats' which are placed seemingly arbitrarily, by a kind of willful chance, the player's activity.

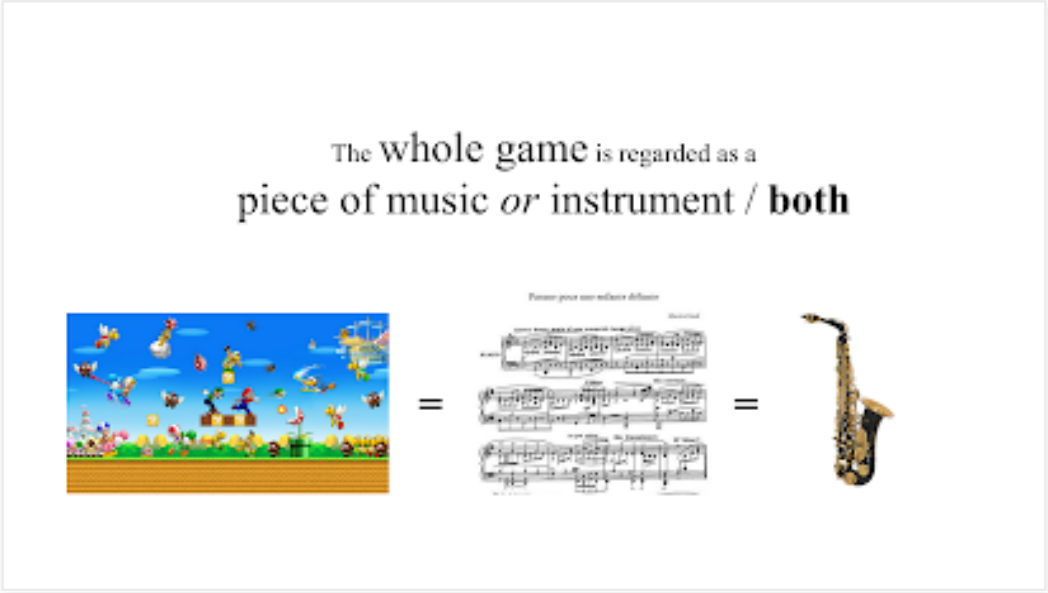
Music design takes this basic temporal architecture of *any game*, and 'hugs' it with a material-vibrational SKIN which is called the 'soundtrack.' This is just like a 'skin' for Winamp or whatever, in that it's at least in theory totally replacable -- the game organism can fully survive a skin graft without suffering any pain.

The skin needs to 'eat up' two concepts/disciplines to be counted as One -- sound design and composition. Musicality should exist in the the haptic-responsive aspects of the sound design as much as responsiveness/touch/immersion/nonlinearity should exist in the compositions.

TOUCH is the thread that holds these components together.

For this reason I add "game feel" to the list of things music design ought to be wholly tuned into. Game feel describes the concept of input-*microrhythm*, more or less, that Steve Swink has written about in his book. It is the game's time-architecture-- but zoomed in deep, where a whole rhythmic composition can unfold in 1 second or less-- how does the ground respond that is covered in honey? in ice? How quickly do we slide down a sticky wall in Knytt?

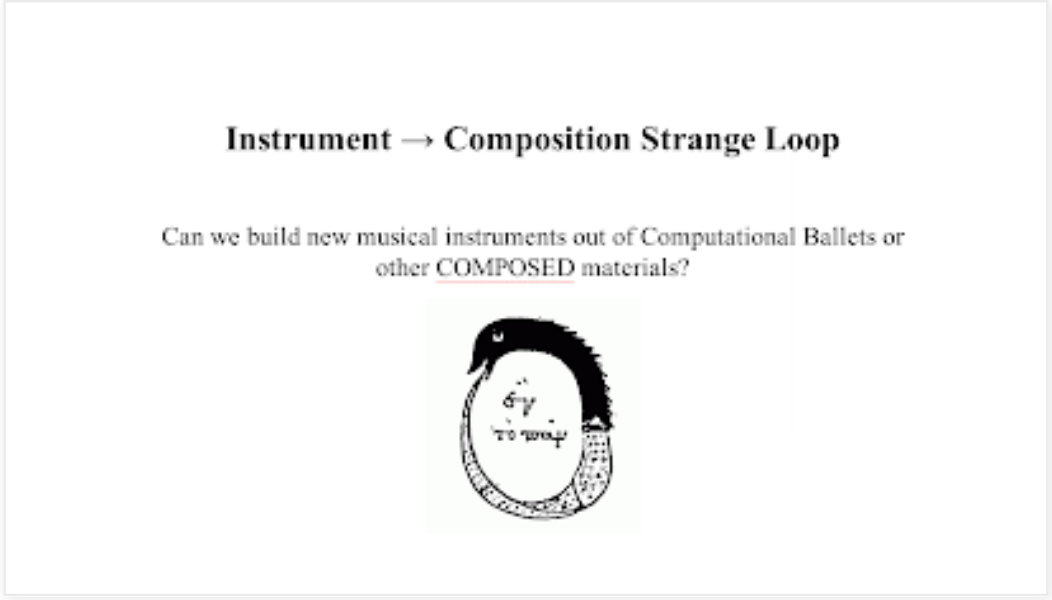
The game feel is like the musculature of the game-organism, which, being so close to the surface of the skin itself, makes itself known, haptic/visual, through the skin, and acts as a medium between the external world and the hidden internals, like the *skeletal frame*, which corresponds to the macro time-structures considered broadly



To treat ALL of these components musically can send us down a sometimes confusing path. We are trying to integrate the a meaningful aesthetic of both **pieces** of music and of **instruments** as if these were One Thing. Something that has beautiful sequence (regardless of the order of seqence) in addition to beautiful TOUCH/response.

Beautiful TOUCH has not been often acknowledged as one of the most important parts of music, because it is *always* tuned into from the PLAYER's perspective, much moreso than the listener's (even if listener-projection *into* the player is a very real thing). But the player knows well the importance of touch, and that, indeed, there are countless pieces of music that, while beautiful in their touch, for those involved in playing, did not seem so to the audience members who were not implicated in the causal source of the music in the same way (The opposite is also true-- beautiful sound-affects, ugly touch-- and this is *especially* true of much computer music today).

This is one of the greatest challenges of music design in light of musical developments considered broadly. To integrate an aesthetic of *immanent touch,* and necessarily *transformation*, into the existing aesthetics of progression, sequence, etc. Perhaps this is something that can *only* be done in videogames, or in other software spaces considered broadly. Spaces which, are they to become *compositions*, need to integrate something of the elastic-sequential aesthetics that videogames have really excelled at.



This is the question: can we come to terms with an understanding of instruments and compositions which are not at all describable in terms of a simple one-directional hierarchy?

As is the case today, instruments are used *in* compositions, and not the other way around. It is much more interesting, it seems, to ask *how compositions can be used in instruments...*

Scrubbing through samples is a basic way of practicing this idea today, that anyone can do. The *instrument* is the sample-space, which is the linear strip of information from the beginning of a piece to the end-- but the the instrument's haptic aspect is its capacity to move through this space, not in a straight line, but drifting from point to point, triggering events, new sequences, recombined as parts from the old dissolved whole. The material that is sampled is the *composition* that is used as a component part of the sampler-*instrument*.

Douglas Hofstadter's concept of the Strange Loop, or *tangled hierarchy,* is predated by the alchemical ouroboros (above^^), the snake eating its tail, and I believe this will prove to be a very powerful conceptual image we might want to consider carrying along with us to navigate these problems..

Once the strange loop is taken for granted, there need not be any difference between an instrument and a composition, because we will naturally assume that any instrument has its compositional aspect, its time-structures, and that any composition will have its instrumental aspect, its degrees of freedom, or haptic capacity to be *played*.

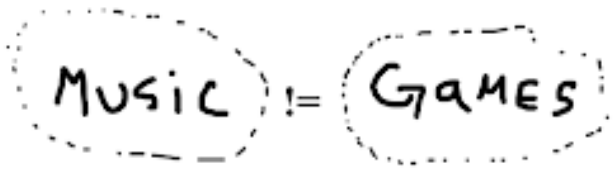
Working Hypothesis #2

games and music are effectively
***the same* thing**

In the same way, then, we're looking to find an understanding in which music and games can likewise be considered as the same-- the strange loop "Games are a kind of music", and "musics are a kind of game"-- *always in motion/dialogue*, but being counted together in the loop, effectively functioning as one.

How?

First--
Assume Music & Games as *DISCRETE* categories



Two spaces: music & games... imagine that they're totally discrete.

Even if we do this, it is impossible to ignore that they are both played, and it is hard not to be curious what is this PLAY that music and games have in common.

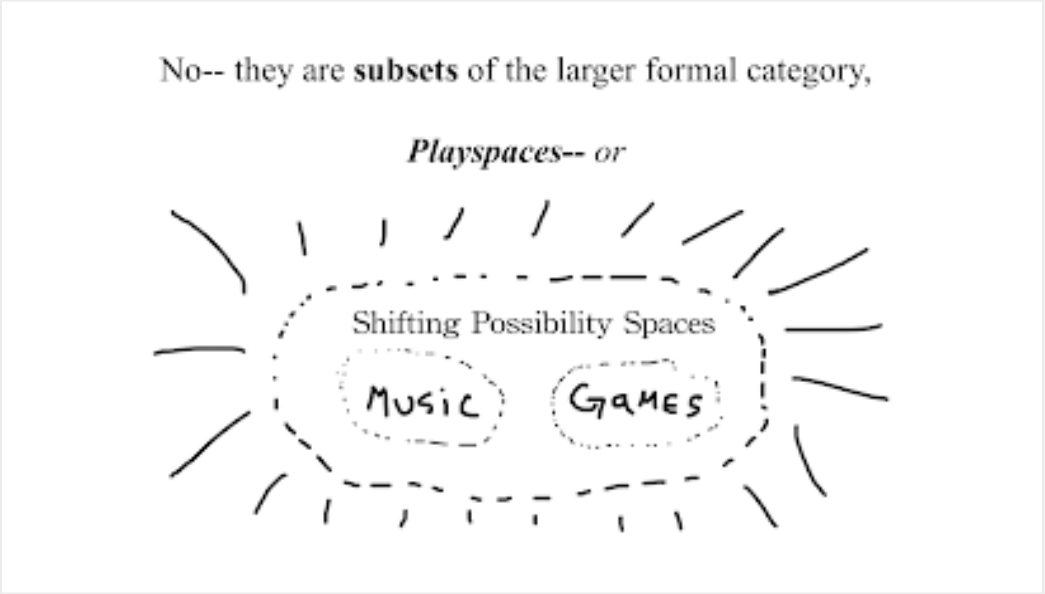
Some would say this-- that the shared use-word is deceptive-- that *playing music* and *playing games* mean totally different things.

& I *do* think there's something interesting to tunnel into here, namely the difference between *aesthetic play* with its unspoken Many goals which may converge into an unspoken One-- and *game play* with its explicitly spoken One goal, which may be partitioned & micromanaged in terms of a manageable Many...

But-- I don't think this is fundamental. Because I think many games are *playable* from the aesthetic point of view as much as the *gaming pov*, and that many pieces of music are likewise playable from the *gaming* point of view as much as from the aesthetic pov. Exploring these distinctions is for another time

It is enough to say that there is something that is *played* which is in common between

the forms..

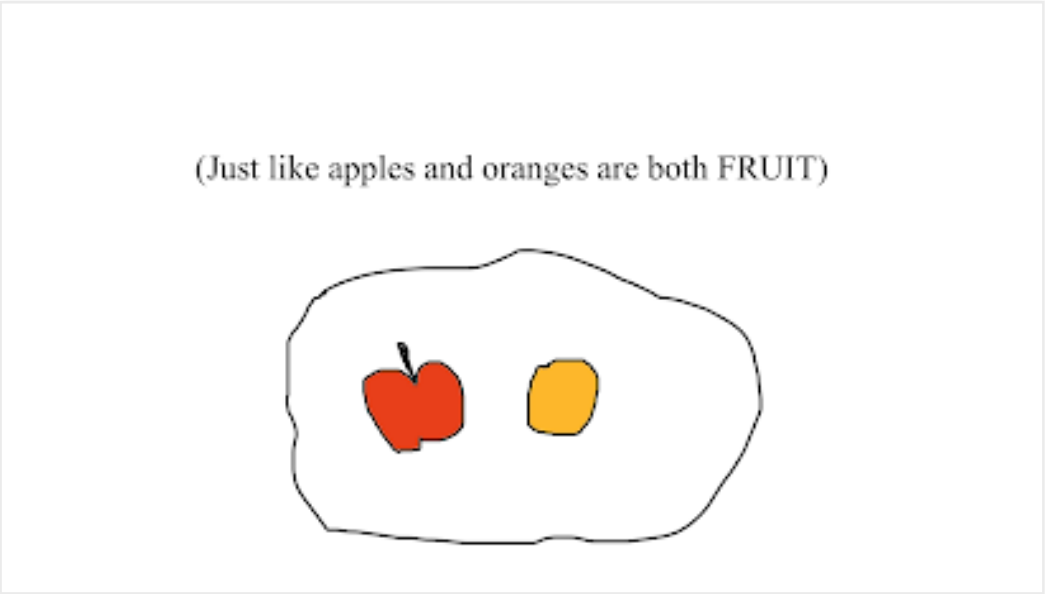


So, then, they are both to be regarded as PLAYSPACES, spaces where play happens...

Or, to be more descriptive-- as SHIFTING POSSIBILITY SPACES.

Shifting Possibility Spaces is my best attempt at describing the structural-*materiality* of this form that game spaces and music spaces are both part of ...

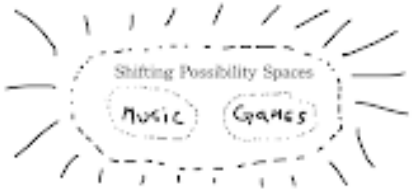
Playspace super-set (space of all possible playspaces??)



Formal **SHIFTING POSSIBILITY SPACES** describes

The **local** (*from the player's point of view*)

experience of any playspace



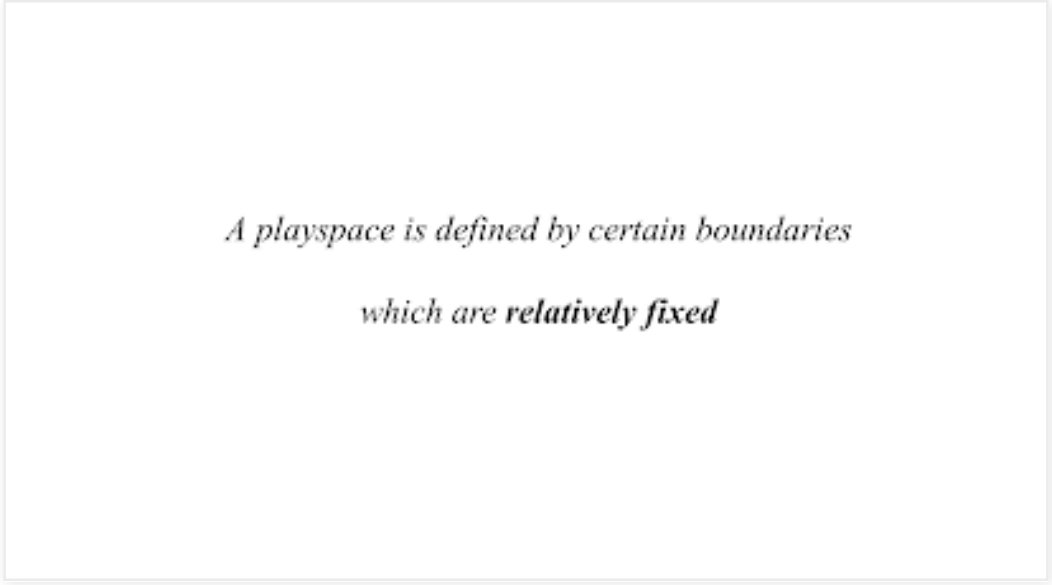
Shifting possibility spaces draw on the already very popular "possibility space" concept-- but whereas possibility spaces appear too often from the 'global' (designer) point of view, which deals with the Universal Set of the situation, or the "space of all possible _____ ", SPS can deal with the immediate sense of possibility at play in the environment.

A possibility space is fully *spatialized*. A *shifting possibility space* allows for the immanent flow of time to enter its description.

Meaning, it can begin to account for the *NOW* in the space-- the possibility space is ALWAYS an contingent thing, which is not describable from the outside-- which is immanent to our situation in the sapce, contingent on the flow of time, always destroying and recreating itself..

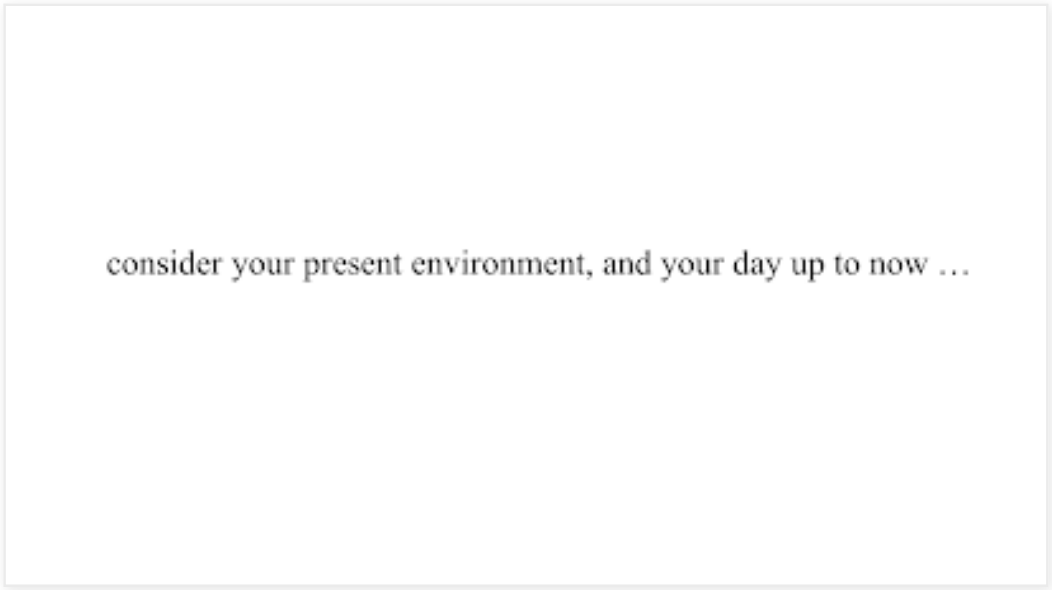
SHIFTING possibility spaces attempts to put TIME back into the possibility space idea, which is too often satisfying with mapping of time onto space ("time is just another dimension of the space").

That SPS will also spatialize time is a probably a necessity and almost certainly risk-- but to keep this in mind early on, the EXPERIENCE of time, local to the player's experience-- maybe we can avoid some of formalism's pitfalls, even as a new aspect of gamespacetime is given quantitative description.



So what does this immediate experience look like? Constantly changing, of course, but changing around *relatively fixed* grounds, which are the conventional mechanics/rules/boundaries/goals/virtualities that are used to describe structural possibility spaces as such. For instance, you probably have a wall near you right now, which would be difficult to break through, and for all intents and purposes, it is a fixed boundary, even though you could smash it if you got a sledgehammer or whatever..

A new way of describing these relatively fixed properties of a space may be in order, one which can account for game mechanics, rules, instrumental resistances, etc.. i've been attracted to some of the language in the chaos sciences of emergence/complexity/etc, which seems ripe for reappropriation in the context of PLAYSPACES (PLAY is the entropic elephant in the room in all of that, if you ask me..) .. attractors, topological invariants, phase transitions.... but im getting ahead of myself, just a quick mention if you're keen to follow clues and cruise down those avenues, from the *local POV* instead of the *global*...



It is interesting to try to 'map' the possibility space of a given day, which might start out as deciding whether to snooze the alarm or not, and then once out of bed, which

branches in insane numbers of directions/dimensions..

What we find at each of these branches is an EVENT of *shifting possibility,* wherein new possibilties present themselves which we did not account for as possible prior to the transition. Beginning of Ocarina of Time, we are still in Kokiri forest-- we beat Ghoma-Deku, and are given access to Hyrule field. The moment of walking out into the field for the first time is a keenly remembered one for many gamers, I think, in that the dimensionality of what is possible seems to totally explode at that moment-- castle visible in the difference, flying things all around, sun falling in the sky preparing for night... This is a *hard-lined* shift, from one hard-coded space into another, but we'll find in life that such dramatic transitions, even when triggered by a seemingly discrete event, weave themselves endlessly into past and future, and that indeed these transitions end up being more of a *connective tissue* in our lives than the supposed fixednesses themselves. That transitions, or shifts, are the *ground* of the life we're living.. The *flux* idea, from Heraclitus et. al-- same thing...

So, these are the two poles of the idea-- (relative) stasis and change. The first, stasis, corresponding to the "possibility space" we're all accustomed to spatializing and theorizing about. The second, *change*, corresponding to the SHIFTING, to the Time aspect of play, its music.

Let's try to imagine a structural theory of

Game and Music structures **as situational objects**

composed of **context-sensitive** transitions/events

The kinds of spaces we want to imagine, then, are composed of these *situational objects* (like KOKIRI VILLAGE, or HYRULE FIELD), which are the fixed *things* of the Idea, and which condition our possibilities as we travel through...

But more importantly for our purposes, these situations are composed of necessarily *context sensitive* events that act as catalysts, transitioning the space into something totally new. I remember I learned this concept from Conker's Bad Fur Day when I was a kid, explaining the SHIFTY nature of the B-button, which would respond differently based on the situation..

These catalysts are sometimes discrete event-'clicks' like the B-button, but they are just as often *rhythmical* or *tonal/pitched,* repetitive, dispersed across a time-field, such as the 'flocking' mechanics that can happen in improvised music, where a little tendril of ornamental excitement from one player might be mimicked and amplified in the others to the point of phase-shift, where the improvisation was once moving in a fixed rhythmic-tonal space, now it's exploded into free-rhythm/non-counted pulses, non-counted tonalities, with its own new set of possible relations/feelings.

Any local situation in a game is describable by
the play of *objects & processes in its* ***spacetime***

e.g.

- input affordances (*controls*)
- goal-carrots (*rewards*)
- response structures (*game feel*)
- progressive structures (*sequence*)
- player objects (*moving parts*)
- avatar-animations (*sprites*)

etc!

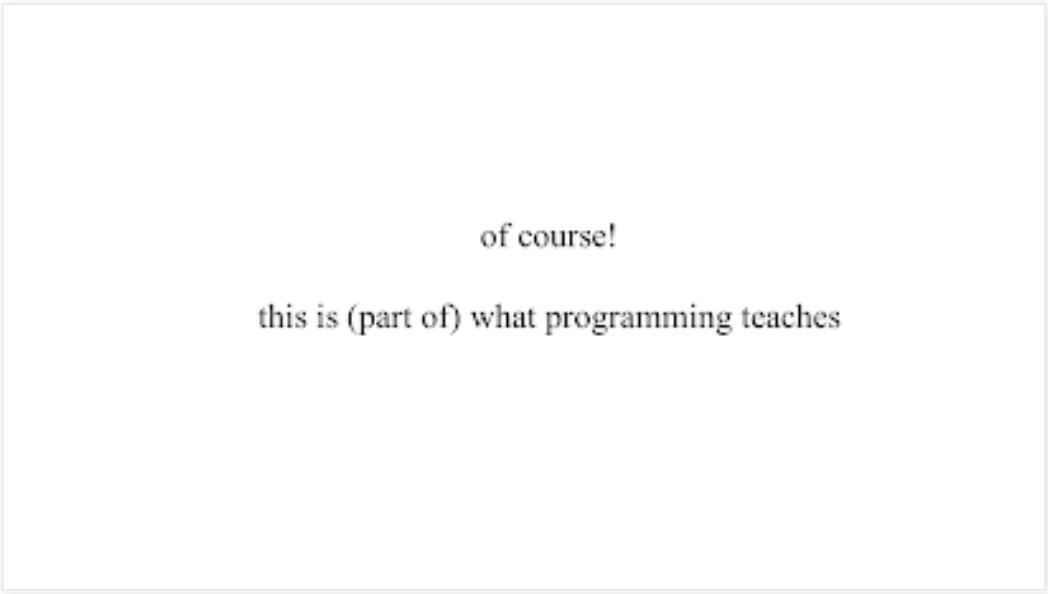
Operations from Mario 64 manual

With the SPS idea *formalized*, it should be possible to describe the *spacetime* of a given situation, which is *curved* by the objects that populate it, just like our spacetime.

This is done, first, by simply identifying the objects and processes at play (which OOO counts as objects, too, and indeed as long as they are *functions* this is the case).

Second, by *PLAYING* them, and working out internal relations (music) from this experience, bottom-up, local SPS, as opposed to top-down, global PS / Universal Set.

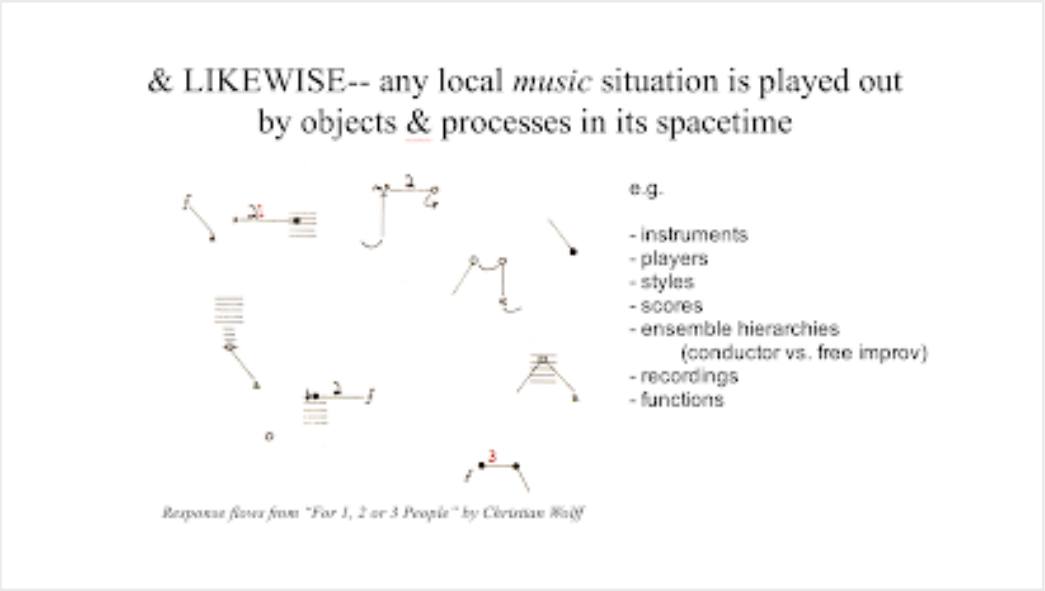
The way we each, individually, choose to engage objects in spacetime, describes the curvature of that spacetime, and it will be DIFFERENT for each player, because we are attracted to different things with differing degrees of intensity. Thus, a probabilistic description of the gamespace is doomed, as it attempts to map a sequence of *different* playings onto space and to then *divide* this space into a statistical average, forgetting the attractional & repulsive vectors of experiential time which qualified the space as such in the first place.



Objects, processes, constants, variables.. etc ! So, programing proves to be an immensely useful tool for conceptualizing these situations.

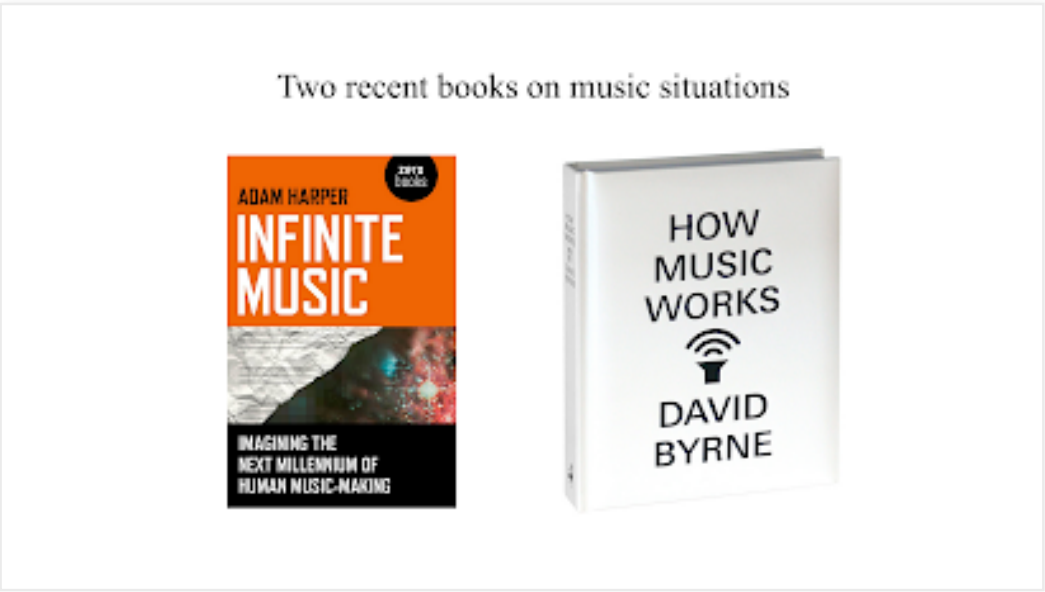
But is *not* THE theoretical answer to shifting possibility spaces, by any means. This should be obvious! This is not 'code-level formalism', even if it uses concepts from code to articulate the structures of immediate experience.

This is part of why SHIFTING possibility spaces are used in contrast to straight up "possibility spaces" -- as long as the space is forever shifting, the particular instance of it that we are experiencing *right now* cannot be counted as a mere repetition, and is *always a unique natural occurence*. We must tune into the *play* experience, to experience even the same computational "game state" as two totally different things when we encounter it at two different times in our life... Allow our body to be the medium...



It's the same with music situations. And I can see RIGHT NOW that maybe the whole talk should have focused on a zoom into this slide, to articulate the means of *objectifying* music spaces, to count the contours of situations, etc., and to speculate as to relations between these objective contours and the *means of transitioning between*.

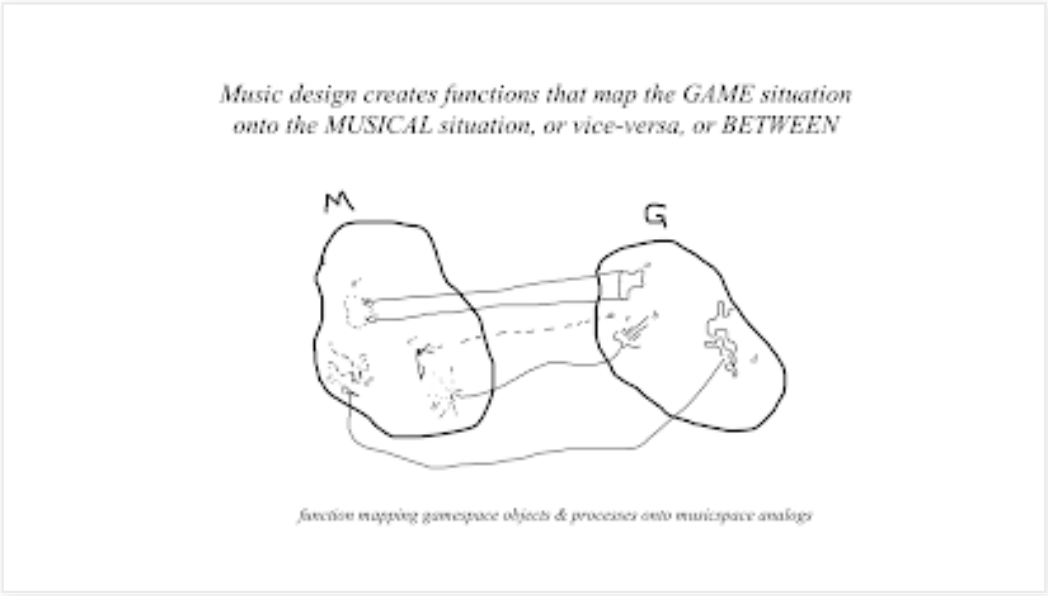
But for now let me just point you to a couple books:



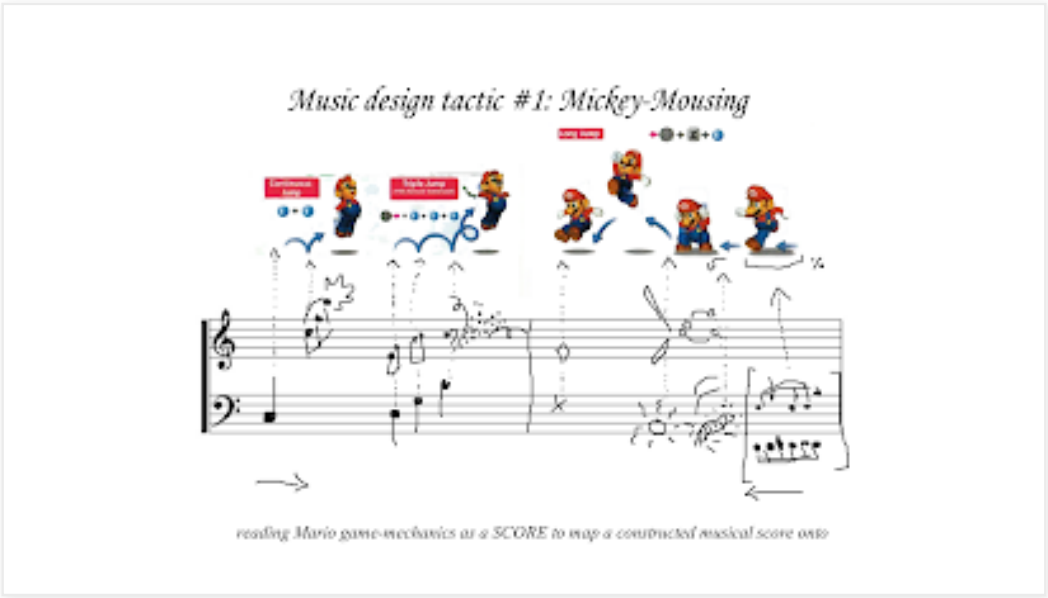
One of which is Adam Harper's excellent *Infinite Music*, which describes the 'progressive differentiation of music space', how musical *difference* happens.. Ethics of *variability-- SHIFT*.. It is a beautiful kind of new-Pythagoreanism that I'd hope might reinvigorate interest in the relation between musical, geometrical and metaphysical structures as has been so popular throughout much of pre-modern history... That *new geometries* is required is obvious (the old *musica universalis* being based on the integer harmonic series and an incorrect mapping of this to planetary motions)-- Harper's geometries flow very nicely into those of much of the speculative flux-philosophy that is popular today~~ like that of Gilles Deleuze, Alain Badiou, Manuel DeLanda, Alfred North Whitehead.. following, too, the pre-hyperdub qabbalah of the Nick Land/kode9 etc's Cybernetic Cultures Research Group, and the possibility of *liberation numerologies*.. A new geometry of *mereotopology* (parts and whole relations

and their interlinkings), navigating by the local *drift* / nomad, etc... This is an image that is so exciting to me, a music theory that does not stop at sound, and thus which does not stop at *anything*-- returning, perhaps, to that old-fashioned theory of musical connectivity, which I think will prove immensely *useful !*

I read David Byrne's new book recently, too, and it is less explicitly theoretical, but comes from a similar point of view, that all music is *contextual, situated*, and describes this position with a kind of everyday ease that some might find lacking in Harper's more coded/ scholastic style. Bryne's *objects* are VENUES, MONEY, SOFTWARE, STUDIO, ENO, OVERDUBS... etc ! These will *curve* the experience of spacetime just as much as anything else.

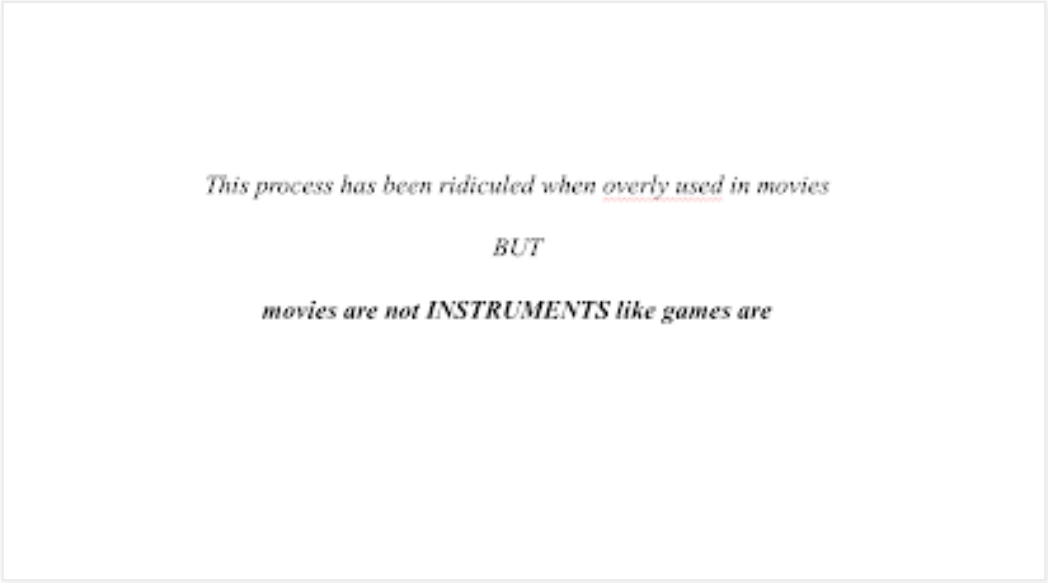


The goal with music design, then, is to MAP game spaces onto music spaces, or vice-versa. Or back and forth, etc. To identify objects/processes and the curvatures of played spacetime that they suggest (ways of playing they invite us into), and to show how two sets, one music and one game, can be corresponded to one another by allowing their constitutive objects to play similar roles.



And the most simple example of how this is implemented is the idea of MICKEY-MOUSING, which plays a musical event for every haptic/visual game event.

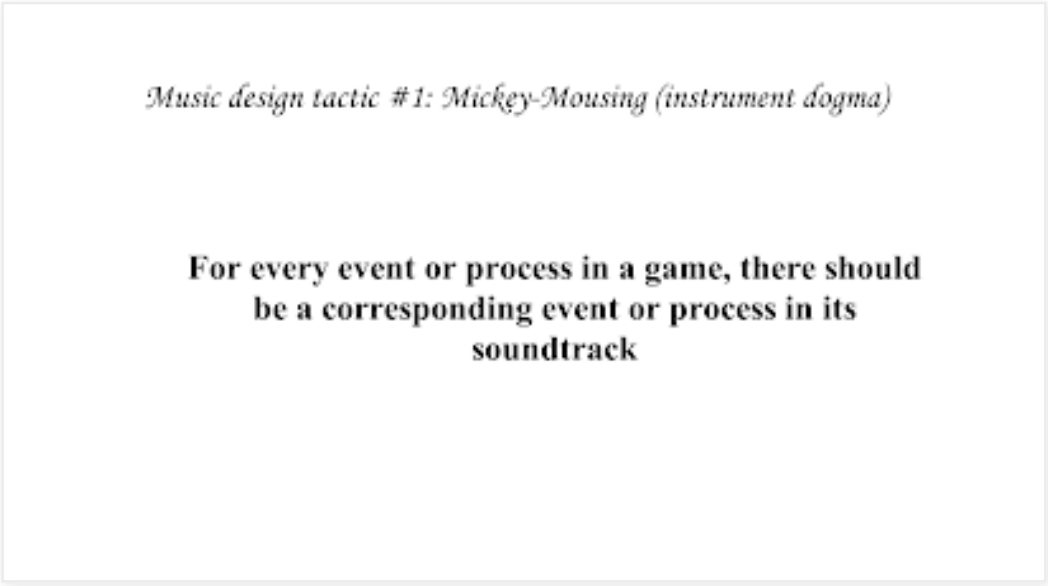
This is the most simple AND the most complex tactic, according to the relative complexity of the gamespace itself.



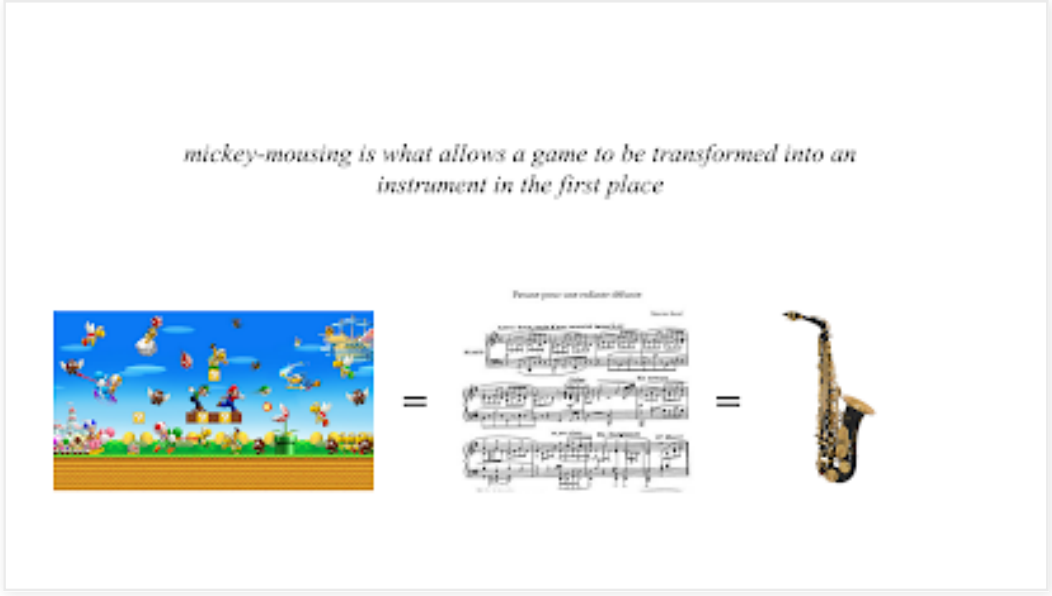
It is THE music design tactic. Which should not be looked on as gimmicky, as has been the case in movies.

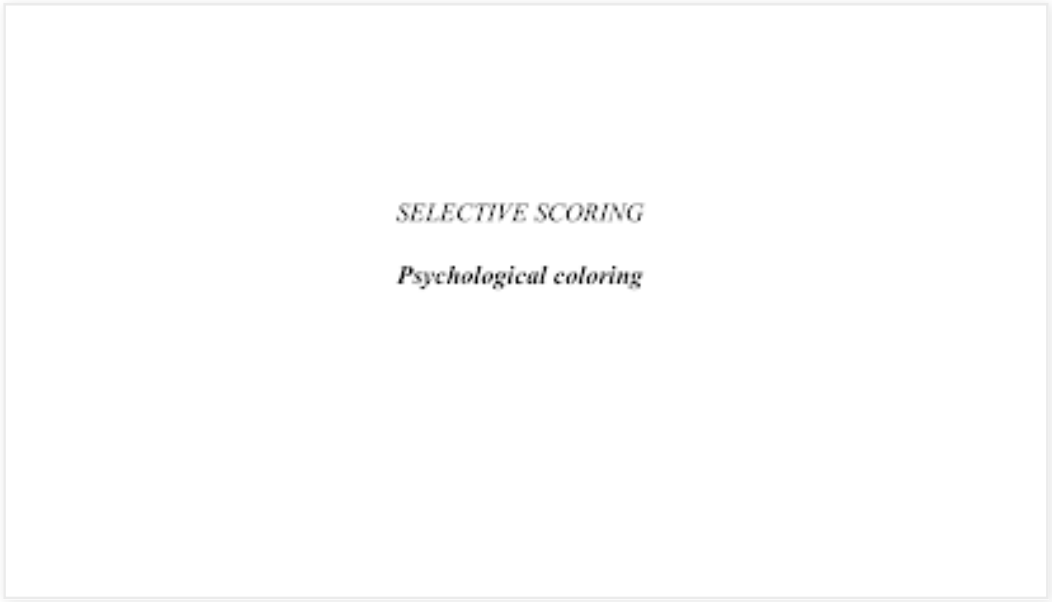
In movies, the mickey-mousing is not involved in *turning the movie into a musical instrument*.

In games, mickey-mousing always serves this function. Because we are in haptic contact with the game, when events are given musical skin, we become hyper-attuned to the possibility of *playing* those events, and this is how a musical instrument is born in the first place..



So ^^^ this is a *dogma* that I used for a whole





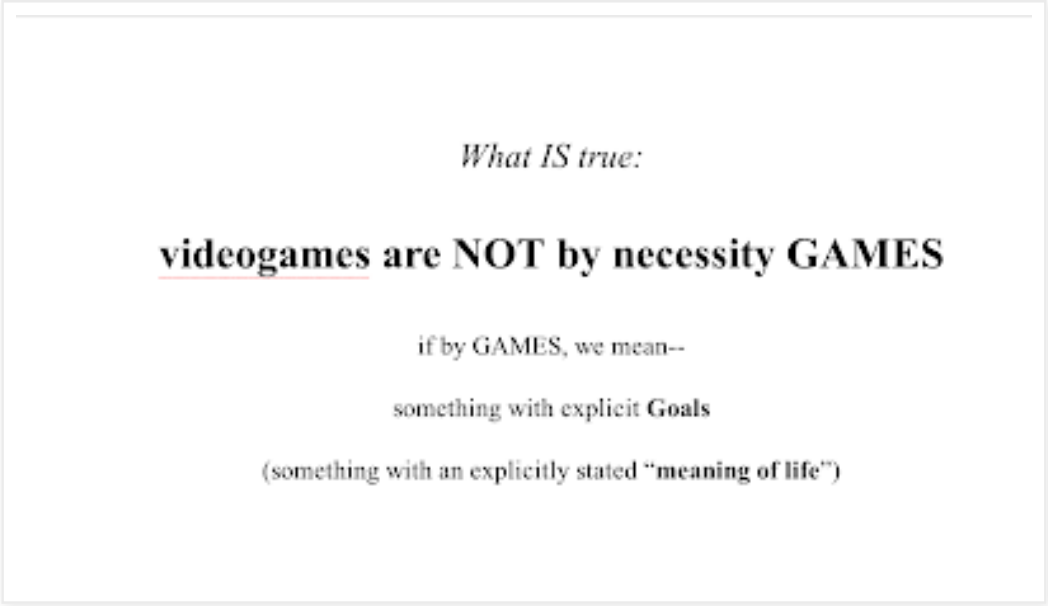
But of course, the dogma need not be heeded. Leaving some game elements un-scored will have the effect of amplifying the attention we give to other parts, which is useful in any number of ways.

The Assassin's Creed example that I put up here last year does this, where only *footsteps* and *murder* are given corresponding musical elements. And murder is only a chord change.

Are they?

It was a rhetorical question all along!

I've found the concept useful, and will probably keep exploring it, but the point is *not* that this is a fact, an objectively TRUE proposition.. This all depends on how you want to understand games and music--
Rather, the point is that it is a *useful* one if you are interested in doing things that play with the ideas of games and music existing in any sort of pairing, and that it is useful for moving past this too--



Now, the avoce-- I believe THIS IS a true proposition.

Videogames are called games by habit, but this habit has put us in a funny place, because the structural requirements of the game theoretical GAMES we are used to calling games (which can be played *optimally)* are by no means a material requirement of this medium.

Even when games are apparently very game-like, it is not that they are actually games, with rules that we follow, etc. We are led through a system of bifurcations in the computer, of branching paths, sometimes the paths *insanely* dense with branches, and we are given *end states* every once in a while,which tell us that we've lost, or that we've done well, or whatever.

If we choose to follow the rules that are suggested to us, then the game feels very much like the optimizable games that we have known.

But if we don't choose to internalize the rules, these screens often can feel absurd, out of place.

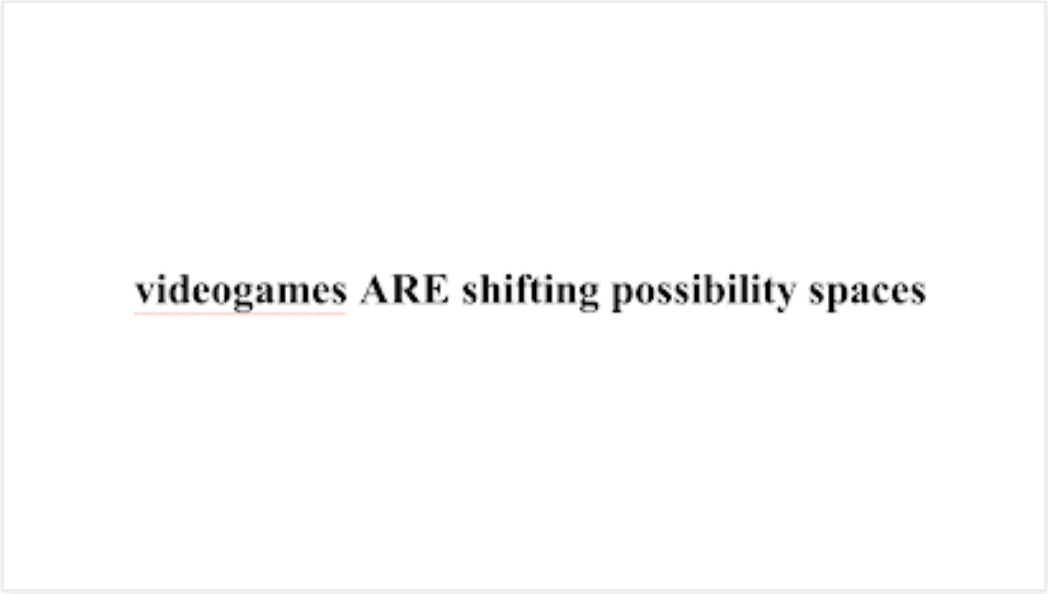
The game is IN US. If we want it to be a game, it will be... but if we want otherwise....

Then we can just *drift*.

And the fact that free-and-easy wandering is possible AT ALL in videogames, no matter how much we're told *not to*-- the fact that MOVEMENT cannot be avoided -- this seems to me to suggest that the *drift* is a more fundamental aspect of videogame materiality than any sort of relationship to game theoretical optimizable games.

We can *move* or *play* in videogames-- not much more can be said definitively. I am interested in a *formalism* (yes! all the better since everyone is jumping the ship, it seems) that builds from this premise, that regards this movement in much the same

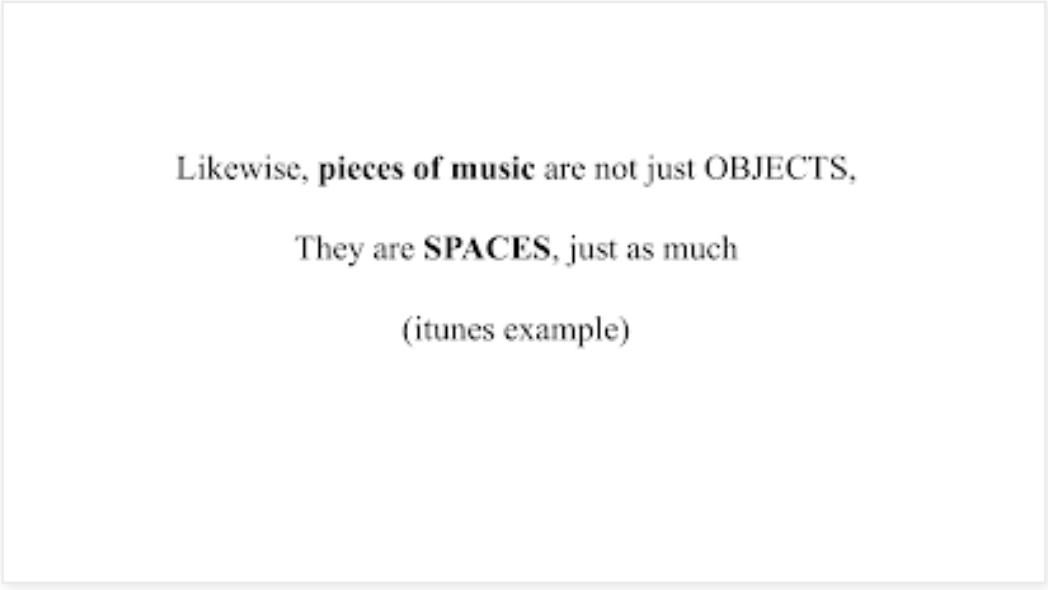
way that musical movement is regarded, which has meanings, but meanings which are unspeakable, which are living in the material itself, and which mean very little when divorced from the context.



So, really, this is how I'd originally thought the idea of "shifting possibility spaces"-- that it's just the most reasonable way of describing what a videogame is, when confronted with the inescapable truth that *a videogame is not, or need not be, a game.*

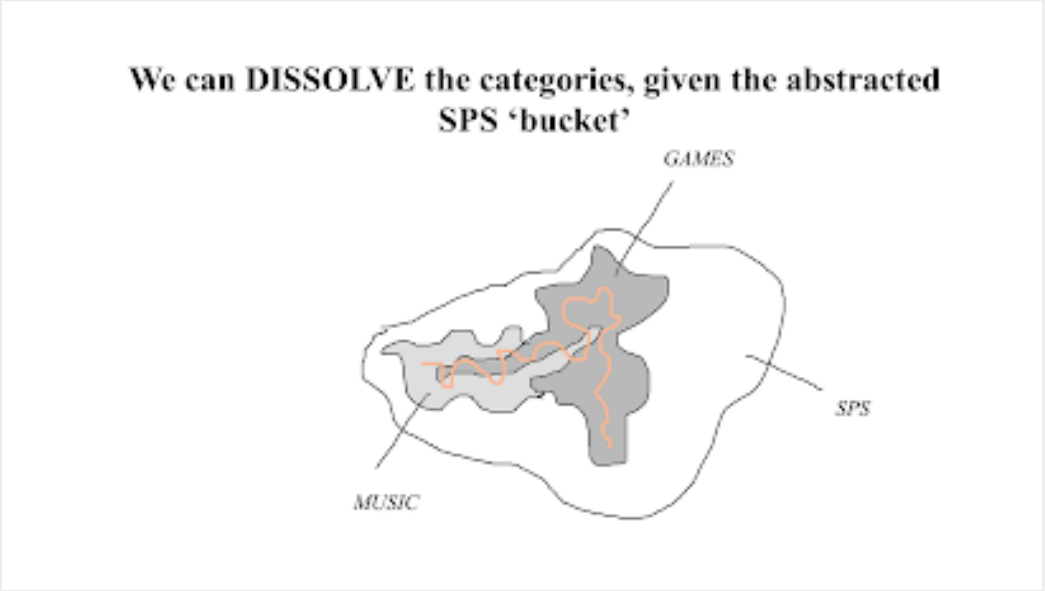
Game-naming politics will go on, but I'd like to try to imagine a future where things have settled down and either *everything* or *nothing* is allowed to be a game-- where the fact of *playing* takes precedence, and the *materials* that are playing back-- and that the game is still regarded as a *conversation* like Chris Crawford has said, but that it emphatically one of mutual receptivity, rather than one of control/persuasion--

I like to imagine that a point of view from along these lines could be regarded as *more realistic* than that of the GAME OBJECT image and its corresponding representational-boxes sculpted by the designer from the top-down/Universe who has God's perspective, where all the shifts are part of an unchanging whole in His control.



And the same thing with music.

We're still living in the age of the music object, and there will be more of this still, but the sooner that we can respect that OBJECTS ARE SPACES, I think, and that *we can play spaces*-- the sooner we'll be on our way to allowing all the connections that are possible to be forged between these concept-groups.



So, ultimately SPS feels useful to me as a SPACE in which to dissolve seemingly disparate played categories. Like a bucket to pour materials into, which can be mixed up with water (quintessential SPS substance), and turned into a new whole of some kind, a time-irreversible process of making mush out of categories that, once mushed, can no longer be separated and counted as properly discrete units.

SPS operates on the hope one day maybe it wouldn't be very strange at all to talk about games and musics and all other PLAYSPACES as *one substance*-- composed of many, but all of which can easily *speak* to one another and *listen*, because of their shared structure in time, which is concerned with immanent possibility and its contigency on the particulars of the situation which are ALWAYS going to change, even if some more gradually than others.

New Wholes from Mush.

II. Practice

Here are some particular strategies/ things I have learned while working on different games.

I've learned a lot more, too! This is just a little brain-dump, trying to connect design pragmatics/particulars to the theory that I've covered up to now.

PANORAMICAL

- Model of N-Dimensional game-space

- *N* smooth variables, DEGREES OF FREEDOM, from 0 to 1

- Combined in harmonic INTENSITY

Panoramical's 18-dimensional phase, controlled by 18 parameters on a MIDI controller or other, seems to me to be a PERFECT starting model of these ideas, and how they could be connected both to concepts in playsapces that are so easy that infants (infantile!) or animals could play them (all you do is *touch, slide*), and to concepts in math (the 18-d space itself), and how, building from here, mathematical concepts might be used to enrich N-dimensional spaces in such a way that *animals can still play them*.

Panoramical is ready-proof that a HIGH-DIMENSIONAL system is not really so confusing when we encounter it *locally,* knob to knob.

Even without connectivity between dimensions, a high degree of complexity is possible,

the local states of which are determined by the *point* in phase space represented by the current values of the parameters, and the *line* which leads up to that point, which dances in some or all of the 18-dimensions. The relations *between* dimensions are the sorts of *harmonic* relations in this space, pointing to a connection between an SPS of this sort, where *all is given* in advance, and say, the piano keyboard as SPS---we would not consider it to be a 'dynamic' game, the piano, but the harmonic combinations we channel through it alters our own sense of possibility, and indeed when we have been playing on the white keys for a while, stratifying habit, the black keys do not *attract* our fingers so strongly-- habit, too, is an object which curves spacetime.

"Architecture is frozen music"-- via Goethe and others

Now, it is possible to create these architectural spaces that are rather LIQUID than solid, as Fernando Ramallo has done in the visual environments, and it becomes interesting to plug this new empirical evidence of liquid architecture back into the equation, which now reads:

"Architecture is music" (which, I guess, can be SOLID (frozen, traditional), LIQUID (videogame), or GASEOUS (4chan?).

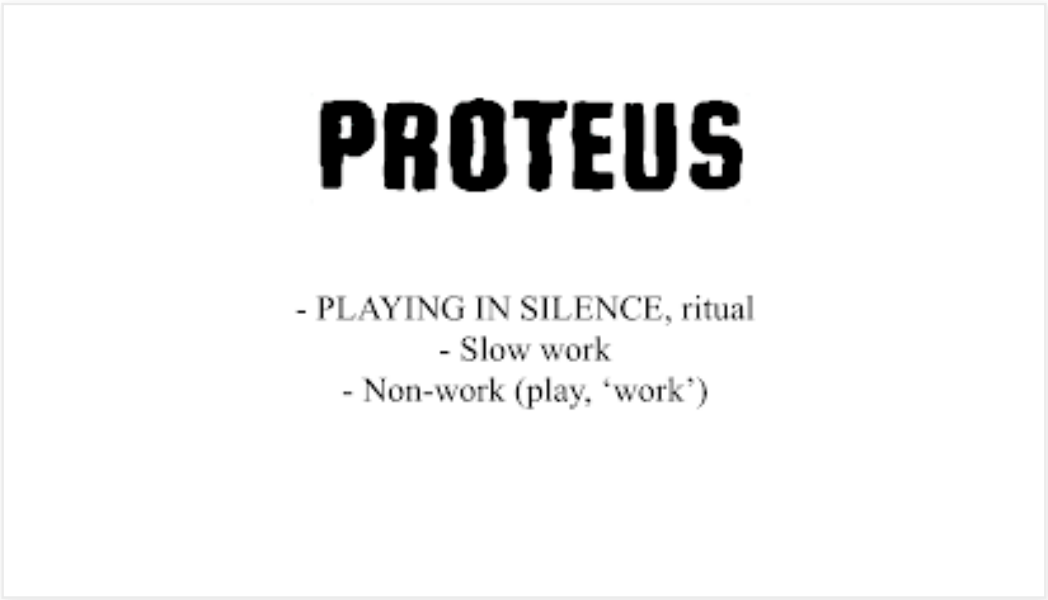
I have no idea how to do a dimensional model of Dyad-- there is *a lot* going on!

Even without being able to wholly *count* the full dimensionality of the system at play, though, it was possible to tune into all the micro-rthythms of the game, to separate them into Classes of events, interactions, etc., and to put together a list of 'homework' to get done, all of the parts needed to adequately account for the progressive *differences* at each moment of playing...

What was KEY with Dyad, was being comfortable producing TONS of stuff.. WORK WORK. And to be happy doing this, to treat the work AS PLAY.

To *not judge* the work, but to just get it done. There was some judging, to be sure, but it was mostly playing, with the belief that it didn't matter so much *what* the particular content or SKIN of the game's soundtrack was, but rather than the skin hugged the muscles/game feel nicely..

Much of the Dyad work with Shawn McGrath is the most intensive 'music-organism' shaping I've done, with lots of attention to detail, little volume fluctuations at every point of played contact-- so many details, you zoom into one and lose track of the others, and what is achieved is a strange hyper-intensive messiness/ornamentation which gives particular affective potency to different mechanics in different situations, such that the original CLASSIFICATION of them into groups becomes more difficult, each particular is its own thing..



Finally, Proteus-- It used again, similar mickey-mousing type techniques throughout, for animals, environment, seasons, weather, etc..

What I want to emphasize in Proteus work, though, which is very much reflected in the existing rhythm of the final product, is the GRADUAL work that went into it.

Slow work. Non-work.

Ed Key had been working on it for a year before I came on board already, but even once I joined up, a lot of time was spent discussing themes, possibilities, this sometimes more than actually putting in any new content.

The shared mood that was created was the PLAY of making the game, and there was work, too, but this, at its best, *amplified* the play, the non-work, rather than negating it..

The WORK is key, too, but the energy for work was nourished by a taste for non-work ~~ it will be important to nourish work on videogames in general from things outside

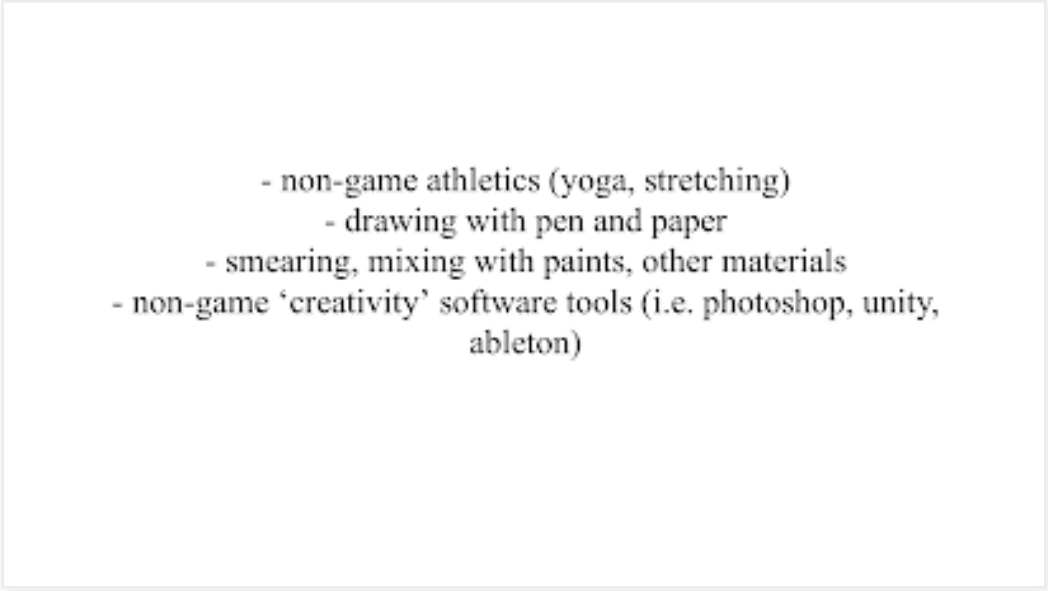
of those games.

Some of the most powerful experiences I had with Proteus were the early builds I played, before I had put in any music. I just loaded up the game, and played in silence for a few hours. *Imagining* the form of the music, the mood of it, the structure of its possibilities, even if I didn't imagine any musical themes in particular. This brings us back to the Kandinsky painting from earlier-- and the possibility of *listening* with other organs than the ears.. Listening with the *eyes*, listening with the *fingers/touch*-- these have felt like KEY tactics throughout all of this work, and by no means am i a clinical "synesthete"-- I do think this is a kind of mood or way of playing that can be entered into by trying to amplify *receptivity*.

And thus, the *non-work*. Being receptive cannot be a strong-willed *WORK* because it requires a silencing of the will that is that active agent which allows work to happen in the first place..

It is possible, too, to balance work and receptivity, and I have managed this on a few occasions-- but I have not figured out any consistent method for doing so.

Where to go with these ideas?



Following Darius Kazemi's pretty aptly titled "FUCK VIDEOGAMES"-- I'm enjoying taking this image of SPS or playspaces broadly and studying all the variety of forms it takes *outside* of videogames proper.

I *do* think there will be a strong role for videogames to play in our lifetimes (RE: Ludic Century), but I'm certain that they're still not there, having not opened up to inspiration from the space of all playspaces, and the possibility of finding mechanism-independent structures in these that can be *computed* in videogames without full loss of meaning (with NEW meaning, at least, where the old has been lost).

So, i'm interested in looking at these playspaces outside of games, but then-- slightly contrary to what Kazemi wrote-- to attempt to integrate them into a zoomed out framework of shifting possibility spaces in general, such that what is 'outside' of games is not thought of as being *essentially* outside, but rather accidentally so.

I listed some examples of these other playspaces above, a list that I've not really seen any attempt to integreate into the 'ludological' framework.

I mentioned earlier the desire for an SPS formalism-- this is probably quite an unpopular desire right now, at a time when games-formalisms are being rejected all over the place, but it feels to me *necessary* in some way. I see the shadows of the the canonic game thoeretical formalisms even in those games that critique the dominant formal strategies.

It seems to me that it's not a question of IGNORING the existing formalisms, but of LEARNING from them, and DESTROYING them in LOVE, blending them up (like we DESTROY a mango for a smoothie we want), in order that they might be recombined, particle by particle, into a formal framework that does NOT stop at game theory, but which allows for analyses of *all playspaces*, whether this be done musically, mathematically, etc.. almost *certainly* pseudoscientifically.

So, lists of *other* kinds of playspaces ought to proliferate, and we ought not be afraid of

the potential this category has to blossom into a new kind of *everything* (this is what the proper meaning of ludic century would blow open into, in my opinion).

All these practices involving *free movement* -- PLAYSPACES -- the question is to find the practices that we LOVE and VALUE the most, and to NOT limit these to videogames-- and to immerse ourselves in *these* practices, to learn from them what we can, and the possibly, if we feel the desire to do so, to *bring back* our love of these things to games. To *count* aspects of the processes in such a way that they can be computed with-- but to *not* disrespect that thing we came to love in the first place.. Not to *gamify* it, but rather to learn from it what a game *actually* is, to learn its pattens of movement, the parts of the body and social milieu that it engages, et etc.

So, with this I become a dogmatist again-- *shifting possibility spaces* as a 'fixed' idea to explore the interrelations between these categories, a ceaselessly transforming substrate or matrix on which apparent differences can be thought and combined/reconciled in action.

Is there an *SPS Realism* that we could imagine? It doesn't seem too far-fetched.. I can't think of anything that does not fall under the umbrella.

Now, what is useful about this is precisely the possibility of dispensing with the graphical and other shallow 'realisms' that games are obsessed with today, and to tune into their rhythms, and the shifts of context that they employ, and the relations of these shifts to those that we experience in life.

From this perspective, it could be possible to design wholly 'abstract' games, with no representational elements, that are nonetheless SPS-realistic, having something to say in their time-flows that reflects the time-flows and harmonies of our lived experiences..

haaaaahhha, but it's TRUE.

The question for videogame-pragmatics is to stop trying to read games as art, and to start trying to read arts as 'games' (broadly considered), as played things, from the creator's POV (conscious or reconstructed fiction), or the viewer (tho only insofar as *viewing is creating*)-- to find out what these things *mean,* not as things but as active *ways* whose gravitational pulls we enter into-- as flux-worlds, chaos-cosmos, process-organism, *shifting possibility spaces*.

Posted by David Kanaga at 11:22 AM 24 comments: