On Toy Aesthetics: Wittgenstein's Pinball Machine (part 1)

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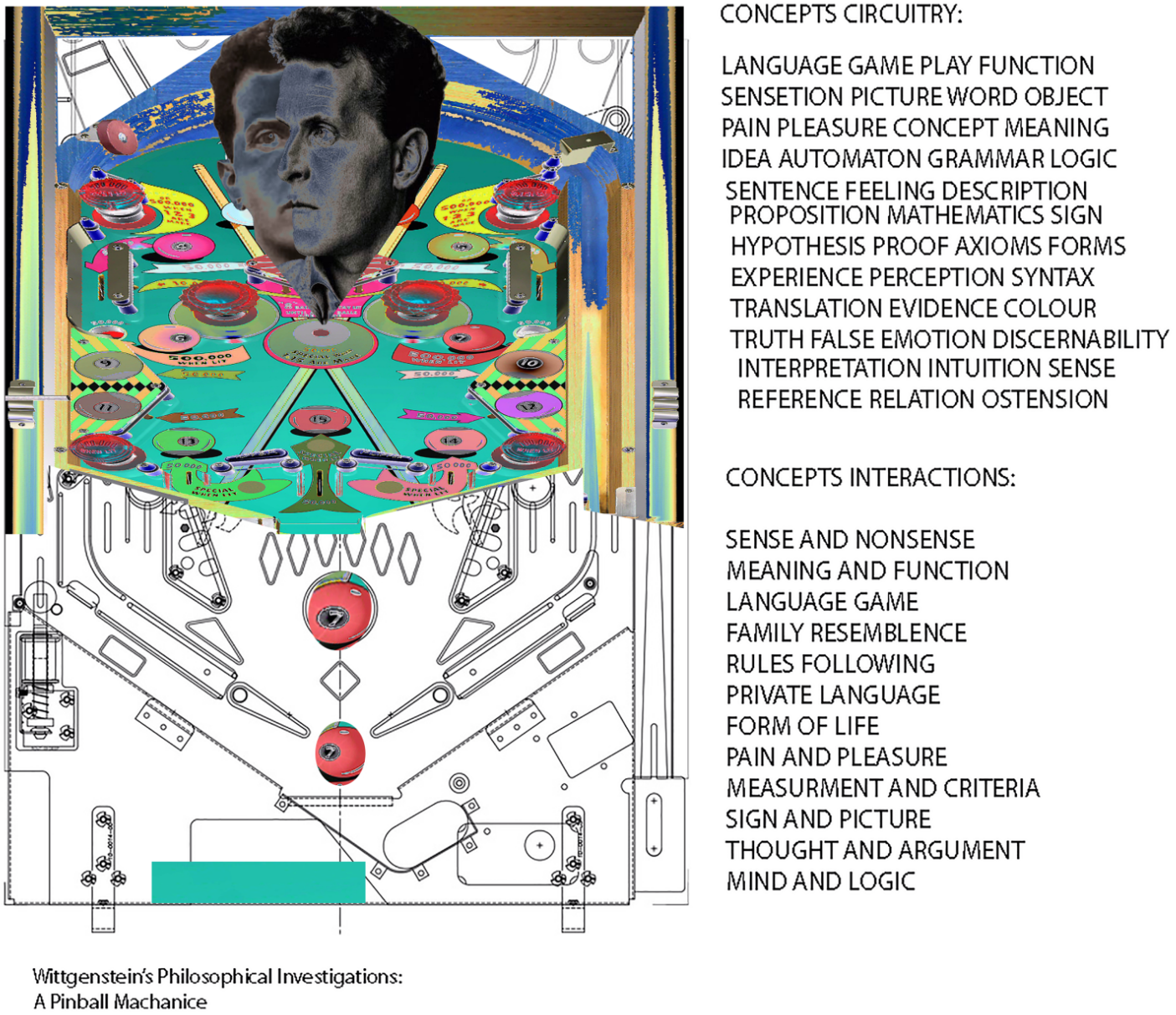


Wittgenstein's Philosophical Investigations:
A Pinball Machanice

This is a first installment and a sketching of some thoughts on toy aesthetics and a design for a pinball machine inspired by Wittgenstein's Philosophical Investigations.

To assume the discernable conditions between *what* is art and *how* we experience it epitomizes the desideratum to assert the separability between the ontological and epistemological underpinning of objects. To speak of a toy aesthetics implies a kind of a cognitivist model of art and artworks that engages philosophical vantage points probing the ontological and epistemological concomitants to the phenomena of art in ways that are entangled together.

Artworks are not simply in the 'world' as objects or events but also constitute 'worlds' on their own both as real and immanent constructs and as counterfactuals. The logic of art as aesthetic objects or events is far more recent than we tend to assume if indeed the very symptom of its ontological-epistemological entanglement is to be construed not as arbitrary and tangential to its various experiential manifolds, but rather as a sort of *evidence* that attests to a series of mutations that occurred within and after the enlightenment.

There can be three kinds of aesthetic models of art making that follow this shift and which I wish to briefly sketch with the help of Adorno and Goodman and later move to Wittgenstein in the form of a proposed pinball machine inspired and configured by his *Logical Investigations*.

The three aesthetic models are:

(1) The ineffable model: based on the Romantic takes of *Ursprache* and inexpressible significances in normative languages or codes.
(2) The instrumentalist model: based on various types of art making which are conceived and assumed as an instrument for either achieving or expressing 'ideas' and 'changes'.
(3) The toy model: following Goodman's world making, such an aesthetic model has a primacy over specific aesthetic objects (e.g. paintings, books, music or films, etc.) in that it functions neither as a representational or anti-representational manifold, nor as a simulation or de-simulation of the 'real' (segments of reality), but rather, as constructing or generating 'Worlds' as emergent topoi or provinces which (like computational models) intervene with the environment on multiple levels.

The ineffable aesthetic model can be seen as exemplifying and in as much reacting to the enlightenment's subsidiary contentions on art as either an expression of reason or unreason. Following Kant's elaboration on the difference between the analytic of the beautiful and that of the sublime and Hegel triadic aesthetic dialectical aesthetics, artists and more broadly participants of art grew anxiously aware of a coming end. Such *end* either of art or of society turns out to be the logical consequence of the locus of reason with respect to thinking, language and reality. Adorno asserts such predicament when he argues that,

"Whether or not the spiritualization of art is capable of this will decide if art survives or if Hegel's prophecy of the end of art will indeed be fulfilled, a prophecy that, in the world such as it has become, amounts to the thoughtless and-in the detestable sense-realistic confirmation and reproduction of what is. In this regard, the rescue of art is eminently political, but it is also as uncertain in itself as it is threatened by the course of the world." (94)

Against such recondite model, the instrumentalist aesthetic model is often associated with the rejection of romanticism despite its genealogical common grounds and its 'faith' in the transcendent powers of art to reconfigure radically our aesthetic experience.

In a nutshell, *romanticism* is often the image that is associated with the ineffable aesthetic model in relation to reason. As either its 'expression' and thus 'affirmation' through sensations and feelings, its negation as that which is 'inexpressible' and absent in normative or logical formulation, or else is to be

found with the *Ursprache* or hieroglyphic codes of *nature's signs* transformed into *cultural signs*. These three variants are distributed profusely and interchangeably and are associated for Benjamin with Novalis or for Adorno with Valery's melancholy. In either case '*l'art pour l'art*' is not an aesthetic formula but instead a panacea for the tyranny of reason in relation to art. It is in fact, ineffability that defines the specific aesthetic conditions under which art is ejected from normative logic, science and language onto a realm of its own constitutive rules or principles, like that of a dream. Even when we consider Rilke and his later legacy, including Musil's *der andere Zustand* ("the other condition"), the ineffable in its modern sense is not flatly a rejection of reality and a withdrawal into the mystical, but rather, an expansion of other kinds of realism that include the non-expressible and non-rational *conditions* of experience.

Following Musil, for example, the modern ineffable is experienced as induced from statistical probability (e.g. markets, weather, even one's chance to deal well in a street fight as it happens to Ulrich in *The Man Without Qualities*) or objective conditions of multiplicity in the world – that include objects, systems and numbers – resulting in the reciprocal mutability between qualities and quantities. His novel starts with the narrating of a car-pedestrian accident in Vienna through a vacillation between multiple levels of information or 'reality':

"A barometric low hung over the Atlantic. It moved eastward toward a high-pressure area over Russia without as yet showing any inclinations to bypass this high in a northerly direction. The isotherms and isotheres were functioning as they should. […] automobiles shot out of the deep, narrow streets into the shallows of bright squares. Dark clusters of pedestrians formed cloudlike strings. […] "According to American statistics," the gentleman said, "one hundred ninety thousand people are killed every year by cars and four hundred fifty thousand are injured.""

The *non-rational*, as opposed to the *irrational*, following Musil, is induced from a multiple and complex systems which in their ensembles 'neglect' to calculate and centralize the locus of humans; thus defining a new *being* or *human* or *man* (for Musil) out of the sheer identification with quantities (money, height, accumulation, networks etc.) and *without qualities.*

The *realism* which Musil is after is expressing multiple levels of reality and identifies a novel kind of ineffable that is more related to language's inability to express complex systems interchangeable dynamics between quantities and qualities than the romantic notion of the inexpressibility of emotions through normative communication and natural language.

The aesthetics of the ineffable places poetry and its relation to 'ur-images' or 'ur-language' as model, either in Benjamin's analysis of Baudelaire or Heidegger's of German Romantic poets such Hölderlin and Trakl. As such poetry, returns to its 'ancient' topos as connected to truth (*Aletheia* or ἀλήθεια) in so far as such truth is defined by historico-social spirit and as manifested either in the intersubjective sphere as a sort of a Zeitgeist or as the semiotic epiphany of life-forms. Underlying such interpretation of aesthetics is a metaphysical worldview that is dominated by vitalism. And it is precisely the vitalist *Élan vital* (to invoke Bergson's term) through which art and aesthetic constitutions in general are construed as occupying the opposite pole to mechanistic, metric and 'scientific calculus' that contradicts intuition and intuitions of experienced life-forms.

Post enlightenment produced a split between two types of 'intuition' which are philosophically one and the same. On the one hand, the concept of 'intuition' is used by Kant as a fulcrum for explaining both cognitive structures and scientific representation of space-time intuitions. Whereas on the other, through the conceptual spin characteristic of Bergson's philosophy, 'intuition' is typified as intrinsically incalculable and irreducible to scientific description.

This apparent contradiction between aesthetic intuitionism and its embrace of the irreducibility of lived experiences (as Bergson's condition to the temporal experience of duration as based on intuition) and the philosophical intuitionism purported by Kant and later Brouwer is a source for a great confusion. Never is 'cognition' situated by Kant in opposition to Newtonian mechanics and hence against the prospect of mechanism in general but instead as its 'foundations' (*Grudlagen*).

It perhaps comes as no surprise that Bergson is adopted by those who sought to emphasize the incompatibility between cognition and mechanism as unresolved (Merleau-Ponty, Deleuze, Stengers to name a few) and as stemming from intuition as intricately connected to organic and in particular sentient and cognizant agencies and therefore removed from the conception of intuitions from the constitution of forms, schemata or systematization of cognition. That the two principle aesthetic models in modernity come in the either/choice between the ineffable and the instrumental approach is a testimony that the failure of reason (in post Kantian sense) to scientifically render ethics and aesthetics intelligible, as in the cases of physics and logic. The Hegelian option or way-out is to propose a new or at least a new kind of logic to the *Sprit* – one that will explain within the bounds of reason the 'unreason' found with the phenomenology of the human experience.

Whereas in 19th and 20th centuries philosophy and science the debate over the nature of reason is defined in relation to the positions taken by formalists, logicists and constructivists and inuitionists (Hilbert, Frege, Poincare, etc.), in arts and the cultural sphere reason is construed in non-abiding relation to science and logic and as such articulated either as the Hegelian Sprit for its own sake, art for art sake or as a revolutionary political instrument – art for the sake of the social. The ineffable and instrumental aesthetic models are hence expressions of the same fundamental inability in post enlightenment to account for aesthetic models which are not hostile and defensive in their approach to science and logic.

Can toy aesthetics, as a cognitive model can be compatible and continuous with science and logic? And through the possibility of addressing and re-encompassing the ineffable and the instrumental as coded within the dynamics of 'play' and 'game' and its relation to 'machine' and 'intelligence'?
However, before discussing the toy aesthetics model through Nelson Goodman's philosophy I would like to hone on some of the main critical contentions voiced by Adorno against instrumentalism in aesthetics.

Adorno, in his *Aesthetic Theory*, which to a large extent attempts to defuse the irreconcilable tension between the surreal and the Marxist as found in Benjamin's work. Benjamin's penetrating insight into art's monadological relation to the real – its so-called "dialectical image" and "phantasmagoria" – enables through an embrace of the unreal or dream-like image/s a birthing of a novel consciousness of reality. Thus, the two paradigmatic cases for Benjamin are Klee's *Angelus Novus* on the one hand and Brecht's engaged/estranged theatre; both ineffable and instrumental in opposite ways in positing consciousness relation to history and politics. For Adorno, none the less,

"The view of art as politically engaged or didactic regresses back of this stage of enlightenment. Unconcerned with the reality of aesthetic images, this view shuffles away the antithesis of art to reality and integrates art into the reality it opposes. Only those artworks are enlightened that, vigilantly distant from the empirical, evince true consciousness." (86)

Adorno acknowledges the entanglement of the political in art in respect to the ineffable and instrumental even though it is often articulated without an ideological framework. Beckett stands as a paradigmatic case to such condition. "Beckett's oeuvre" writes Adorno, "already presupposes this experience of the destruction of meaning as selfevident, yet also pushes it beyond meaning's abstract negation in that his plays force the traditional categories of art to undergo this experience, concretely suspend them, and

extrapolate others out of the nothingness. […] Beckett's plays are absurd not because of the absence of any meaning, for then they would be simply irrelevant. But because they put meaning on trial; they unfold its history." (153)

It is hence the double character of post-enlightenment art that it becomes both kaleidoscopic (in Hegel's sense) and a historical fossil of its own socio-political specificity and as such relegate the sphere of "pure subjectivity" (which Adorno identifies in Beethoven's late string quartets) and its hermetic and ineffable invocations to its social deliberation within society and its political ends. And yet, argues Adorno,

"Social struggles and the relations of classes are imprinted in the structure of artworks; by contrast, the political positions deliberately adopted by artworks are epiphenomena and usually impinge on the elaboration of works and thus, ultimately, on their social truth content. Political opinions count for little." (232)

Adorno's pessimism in regards to art's dialectical negation in respect to the empirical reality is not simply Hegelian but above all assumes the destruction ("pure negation") of any autonomous aesthetics which can either be purged out of the political or atemporally invoke the ineffable. The fact that in this sense art and artworks are incongruence with any conceivable aesthetic models ironically marks Adorno's cultural over-determinism and inability to entertain the possibility of new emergent aesthetic models. Accordingly, for Adorno:

"Art is indeed infinitely difficult in that it must transcend its concept in order to fulfill it; yet in this process where it comes to resemble realia it assimilates itself to that reification against which it protests: Today engagement inescapably becomes aesthetic concession. The ineffability of illusion prevents the solution of the antinomy of aesthetic semblance by means of a concept of absolute appearance. Semblance, which heralds the ineffable, does not literally make artworks epiphanies, however difficult it may be for genuine aesthetic experience not to trust that the absolute is present in authentic artworks." (103-4)

Adorno, I take it, occupies a position both similar and radically different from those of Wittgenstein and Goodman who also maintain the importance of tradition, conventions and cultural values as both the context and the source for aesthetic experiences and their respective models. Although, for Wittgenstein, lifeforms (*Lebensformen*) also entail that the place of expression is in the stream or "flow of life" and as such culture is not simply an ossification of the times in respects to the "playing" subjects, but moreover a complex network of negotiations that test the "rules" of the game before incorporating them into the habitus of "laws." Goodman, on his part, amplifies Wittgenstein's cultural nominalism by extending instantiation not only to artworks but also to phenomenal predicates in general. And by following the symbolic legacy of Cassirer and Langer he adds to the Kantian repertoire of representational modalities also the possibility (virtual yet real) of exemplification.

In contrast to Wittgenstein and Goodman, Adorno retains despite his unhappy consciousness, the duality of aesthetic *laws*/*rules*, thus not allowing an emergent aesthetic system to defy the historical predicament of formal versus subjective or thematic laws.

As Adorno puts it,

"By becoming the formal laws of artworks, conventions inwardly shored up works and made them resistant to the imitation of external life. Conventions contain an element that is external and heterogenous to the subject, reminding it of its own boundaries and the ineffability of its own accidentalness. The stronger the subject becomes and, complementarily, the more the social categories of

order and the spiritual categories derived from these social categories weaken, the less it is possible to reconcile the subject and conventions. The increasing fissure between inner and outer leads to the collapse of conventions." (204)

I would like now to move on to discuss some of Goodman's philosophy of art and aesthetics as a detour that will lead to the toy-aesthetics model and the proposal for Wittgenstein's pinball machine as based on Philosophical Investigations.

Nelson Goodman introduces concepts such as: "worldmaking", "projectiles" and the paradigm of "the languages of art" as constituted by a plurality of *worlds* (without fearing like Quine overpopulating an already inflated universe). For Goodman, phenomenal predicates and the interceding of *play* and *game* in the structuring of perception is critical to understating the senses and uses of art as a form or forms of knowing. Similarly, through toy-aesthetics one can regard the world of toys and toys as models as mutually inclusive without dreading ontological reversals. This is so since a toy is never simply a representational manifold of something in the world to which it is ontologically derived from. A toy such a hobbyhorse is not ontologically less or more real than the animal 'horse' and there is no reason to be concerned about reversing the causal order of any state of affairs. Ontological reversals are the nightmarish scenario of misapplied modal logic whereby counterfactuals obey two distinct sets of rules, that of objects and that of language. Goodman's debt in his aesthetics and its capacities (and which goes beyond Quine's nominalism and various species of linguistic transcendentalism) is to Cassirer's Neo-Kantian symbolic triadic constitution, Langer's structure of feeling and studies in psychophysical research of perception. All of which suggest that the structure of appearance with its sensory and symbolic import is made out of a complex dynamics of projections. Symbols in Goodman's sense are not simply 'projectiles' but rather the ossifications of projections (predicate perception-language-observation protjectiles) which act as *constructions* in art as in science; this is in a nutshell the significance of *worldmaking*.

In Goodman's understanding, similar to what I will discuss later in relation to Wittgenstein's lifeforms, art can be construed as evidencing the "flux of sensory information" and the fluidity of both sentience and cognition in ways that are not restrained and confined by linguistic predicates alone. And Goodman's way, parallels Wittgenstein's, in circumventing the logical positivist tradition of "identity theory" (from Frege to Kripke, Dummett and beyond) in assuming the relations between *languages* and *worlds*. From chromatic changes or transitions to dynamical processes (physical and social alike) a 'grue (https://plato.stanford.edu/entries/goodman/#NewRidInd)' is a toy of phenomenal and noetic importance. Exemplification as opposed to representation and presentation. Following Goodman's suggestion we should really ask, *When is art?* as opposed to *What is art?* on both conceptual and perceptual levels.

Goodman's nominalist position in relation to art's ontological status toys with *radical relativism* unless we address its grounding in perception as the unshakable givens.

Playing with toys presupposes both 'what' and 'when' determinate *x* and *y* factors but in addition introduces a *z* factor of the complex decision involving 'play' on three levels: **(1)** Extemporizing or improvising even bricolage. **(2)** Following some rules of a game or "getting it" as a relative pre-established code. And **(3)** Introducing new strategies.

In his *The Structure of Appearance* and *Fact, Fiction and Forecast*, Goodman articulates the notion of projection (projectability, projectiles, projectable predicates and so forth) as constituting an intension of both perceiving and linguistic appropriation at the same time.

Goodman's philosophy takes us closer to toy-aesthetics since his insistence that *exemplification* and not *representation* is the generative aesthetic modality is crucial to understanding toys as projections. Ontologically, following Goodman, art (like toys) involves "worldmaking" and such world-construction is never delineated inside or outside the representational boundaries (with its lexical constructs) of language. Rather, the fabric of language (and codes as well) is stretched and expanded to fit better the fluidity between phenomenal and linguistic predicates. Accordingly, such predicates are better construed as 'projectiles' in relation to 'projections' and as such toys 'projectiles' are their potential phylogenic agency to generate and influence how we 'play' with them and continue to 'narrate' and 'navigate' such interactions as an ongoing process of projections.

The riddle of perception can be viewed as more radical than Goodman's so-called "riddle of induction" (his dismantling of the Humean problem of induction) and its radicality lies in the fact that even 'observation' is not phenomenally neutral. It can be summed up by the question: how do we *know* what we perceive and at the same time perceive it as sensory information? Goodman's take is that projectability defines the conditions under which the perception and identification of say the color of an object is intertwined with its 'projectiles'. This question is tackled by Husserl in *Ideas* through his affirmation that: "We therefore hold to the word *noetic*, and say: *The stream of phenomenological being has a twofold bed: material and noetic.*" (*Ideas,* p. 230) What Goodman assumes as the "general problem of projection" (*Fact, Fiction, and Forecast*) entails our ongoing projecting of predicates onto reality; and *reality* in this sense is entrenched in the habitual use of 'projectiles' that define in a Husserlian sense a pre-intentional *hyletic* and *noetic stratum*.

A projectile, in Goodman's sense stands for two fundamental enactments of the three fold of perception-predication-language. The first is the case of projectiles such as 'grue' that stand for an object that changes its color from *t1* to *t2* in which case predication comes to be challenged by temporal change. The other, as in the case of emeralds, the 'grue' or 'bleen' is merely projected as fixed description of the object's color and in which case following Goodman we stick to 'green' simply for reasons of efficacy but not necessarily accuracy.

In colors as in shapes we often *get* or perceive a specific chromatic or volumetric form through the experience of movement and change. Thus, the color 'red' becomes redder when viewed juxtaposed against blue – as in Barnett Newman's painting *Who's Afraid of Red, Yellow and Blue* (1969-70) in which the red color field is intensified by the side bars of yellow and blue colors – or else certain volumetric forms cohere as shapes only when we are perspectively enveloped by them or move or rotate around them. More so in the case of visual stability phenomena when we are able to 'localize' or 'collapse' a perceivable object as a 'pulse' or 'flash' between two discrete spatial states.

Barnett Newman's *Who's Afraid of Red, Yellow and Blue* (1969-70)

For Goodman 'projection' and 'projectiles' allows a much more accurate physicalistic interpretation of perception and in as much a more malleable mentalistic fabric of senses. Accordingly,

"The reorientation of our problem may be portrayed in somewhat more figurative language. Hume thought of the mind as being set in motion making predictions by, and in accordance with, regularities in what it observed. This left him with the problem of differentiating between the regularities that do and those that do not thus set the mind in motion. We, on the contrary, regard the mind as in motion from the start, striking out with spontaneous predictions in dozens of directions, and gradually rectifying and channeling its predictive processes. We ask not how predictions come to be made, but how-granting they are made-they come to be sorted out as valid and invalid. Literally, of course, we are not concerned with describing how the mind works but rather with describing or defining the distinction it makes between valid and invalid projections." (87)

And furthermore, both categorical and hypothetical forms of sentience and cognition involve for Goodman the tacit "task of defining projectibility-of projecting the predicate projected to the predicate *projectible*" and are hence complex and irreducible to simple "primitive or raw" perceptions or to "simple universal hypotheses in categorical or hypothetical form-that is, upon hypotheses ascribing a certain predicate either to everything in the universe of discourse or to everything to which a certain other predicate applies." (92)

Nonetheless, Goodman's sides with predicating that "all emeralds are green" as opposed to "all emeralds are grue" as correctly supporting reality can be avoided if we imagine a toy that alters its colors (e.g. a chromatic change in a pinball machine) as not simply a speculative manifold or hypothetical but as categorically *real*. Goodman's contention is that linguistic regularities in relation to perception is more restrictive than the notion of 'projection' allows since it prioritizes 'correspondence' between language and perception as two separate mechanisms.

As Goodman argues,
"The suggestion I have been developing here is that such agreement with regularities in what has been observed is a function of our linguistic practices. Thus the line between valid and invalid predictions (or inductions or projections) is drawn upon the basis of how the world is and has been described and

anticipated in words. […] A theory of projectibility or lawlikeness also removes one of the obstacles to a satisfactory treatment of counterfactual conditionals; but the problem of counterfactuals, as we saw, offers other difficulties of its own." (120-1)

When is art?

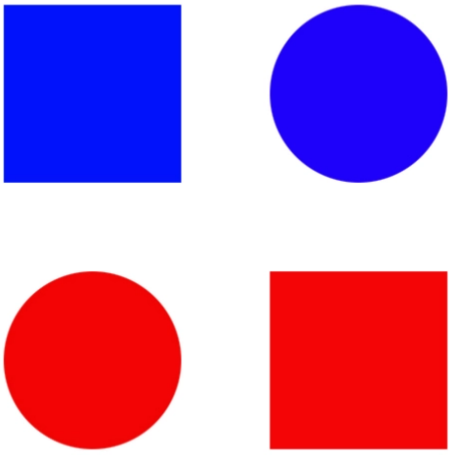
Goodman's contention that we need to replace the ontological query of "what is art?" with that of "when is art?" raises four pivotal aspects in relation to the toy aesthetic model. The first that rather than assuming the fixity of both the phenomenal and conceptual perception of art we need to address it in relation to temporality and its changing modes of *conditionals* (i.e. by *conditionals* I refer to art necessary and contingent constituents which are *totalized* in the phenomenon of the artwork). The second is that art addressed by the question of when and not *what* is situated within the context sensitive conditions (environment) of its nominal predication rather than affirming universally its law-like (nomological) character. As opposed to science, art is predicated as a systematized irregularity or singular emergence that obey the rules of *pure* only in retrospect after the social conditions of its production ceased to dominate culture (Adorno). And as such, Goodman's *When is art?* also suggests that the vector of projectability leads us to toy-aesthetic model as formulated through the question: *how do we play such and such art?*

The last question expands the Wittgenstein's assumption of "logical grammar" in connection with language-game to art as connected to the notion or possibility of aesthetic play as associated with toys as objects or conduits which obey a complex dynamical systemic principles that leave *open* the interplay and inter-mutability between *codes* or *logical calculus* and the degree of intensity and amplitude of environmental (extra-systemic constraints) as they folded in and out as quantitative and qualitative dynamic *attractors* or gravitational points.

In relation to the schematic design of the Wittgenstein's Pinball Machine we can introduce Goodman's contentions on the "riddle of perception" – following his cognitive approach to perceptual phenomena – as a way to account for the machine's perceptual organizational "world-making". Goodman's analysis of some visual phenomenal predications of colors, shapes and structures of appearance is applicable to the design of the Wittgenstein's Pinball Machine.

To overcome the difficulties of counterfactual modalities resulted from the notion of 'projection' Goodman develops, in his *Ways of Worldmaking*, an understanding of perception of *sensory flux* that is defined both by projection and exemplification in as much as its posited projectiles consequently becomes *worlds* also on their own stand. Thus, knowing-projectiles become ontologically entrenched in both perception and actual 'objects' or 'events'. Accounting for Kolers' studies in human perception of motion, Goodman writes that it confirms that,

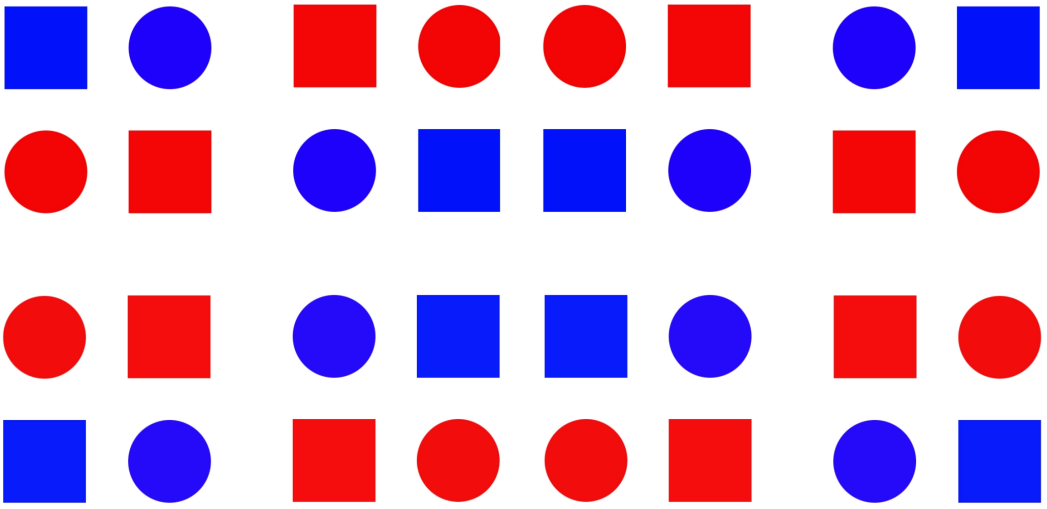
"[a] subject can learn to tell rather reliably whether he perceived real or apparent motion. Seeing a spot as moving when it does not has a discernibly different quality from seeing a spot actually moving. But perhaps even more conclusive is Kolers' experimental determination that while real motion along crossing paths may be readily perceived; paths of apparent motion never cross. […] Real-motion perception and apparent-motion perception, though alike in important ways, are still often very different.
Whether perception of the first flash is thought to be delayed or preserved or remembered, I call this the retrospective construction theory – the theory that the construction perceived as occurring between the two flashes is accomplished not earlier than the second. If this seems a complex and even somewhat fanciful explanation, it strikes me as quite in character with the complex and remarkable phenomena we have been encountering." (81)



Goodman's figure from *Ways of Worldmaking*

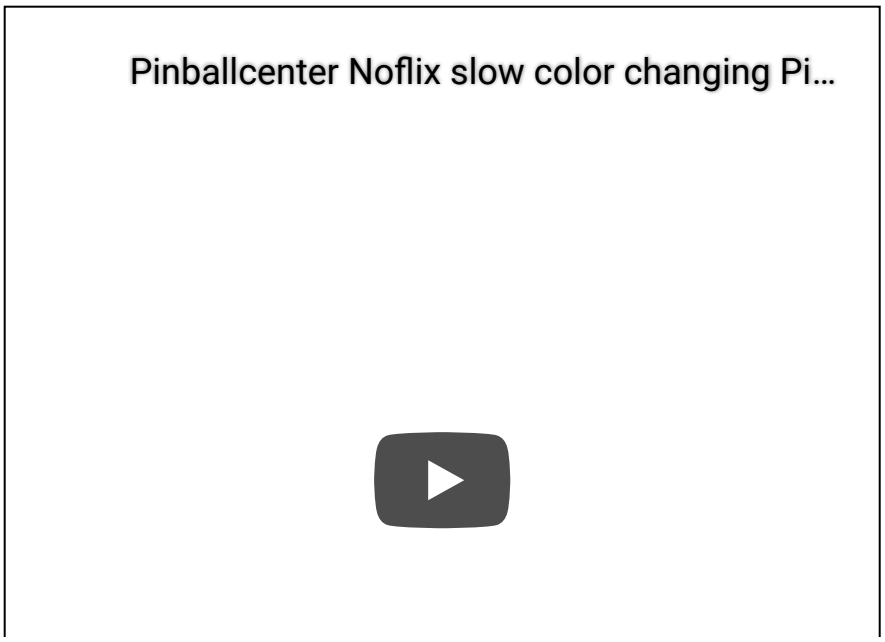
Goodman raises the 'puzzle' or 'riddle' as connected to the fact that "that virtually every clear case of visual motion perception depends upon abrupt shift in color." (88)

"How is it that color transition not only works quite differently from transition in place or size or shape but stubbornly so? Even when accompanied (and one would suppose influenced) by smooth change in these other respects, the color jumps. Abundant bridging still occurs; each of the intervening places along a path between the two flashes is filled in, but with one of the flashed colors rather than with successive intermediate colors.
Perhaps the first thought is that since after all color is not place or shape or size, the presumption that apparent color change should parallel change in these other respects is unfounded anyway. But without some explanation of how a specific peculiarity of color can account for the abrupt shift, this helps very little; for place and shape and size also differ from each other in important ways and yet smooth transition occurs in all these respects."(86)



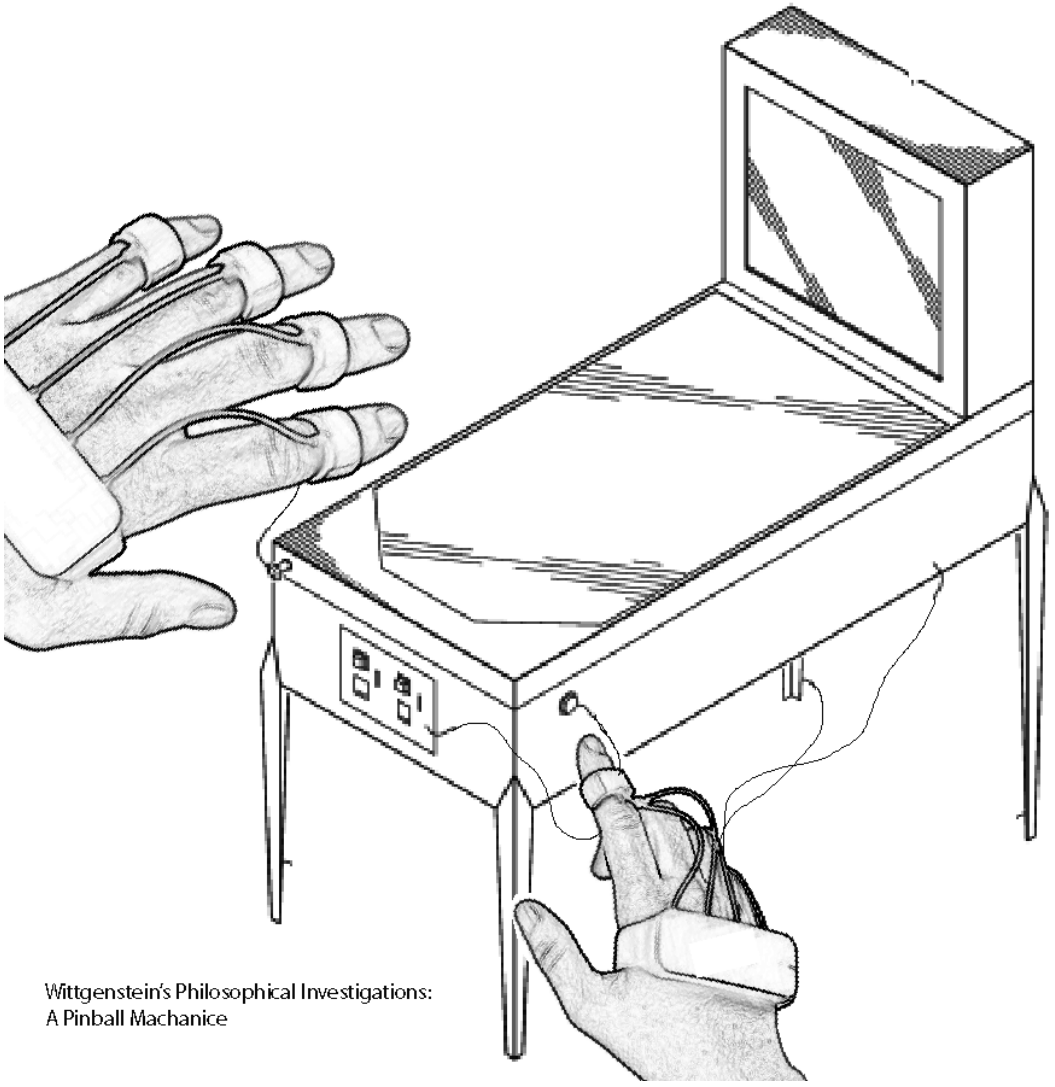
Goodman's figure as a qubit for Wittgenstein's pinball machine

The fourfold figure from Goodman's discussion in *Ways of Worldmaking* conceived for a qubit pinball machine in which every two states have four possible 'collapsed' quantum computational state which are in turn eight in variations.



Inflecting Goodman's projectiles from their instantiating corresponding conditions in facts to those of counterfactuals allows us to consider a toy's transitional and dynamic parameters which are perceivable phenomenally much like a screen saver in relation not only to chromatic shifts but mutability in shapes, structures and depth to the extent of allowing the toy not to be confined as the objective conditions of rules but instead as the *boundary condition* of playing with reciprocally and inexhaustibly changing phenomenal information.

On Wittgenstein's Philosophical Investigation: a design for a pinball machine



A general visualization of *Wittgenstein's Pinball Machine* as based on the idea that 'pleasure' and 'pain' are introduced to the game through VR gloves.

The idea of emergent games with open ended play or how localized stabilities and axiomatization of the rules of playing a game is retained within a toy aesthetics. **(A)** What happens to Wittgenstein's PI when we articulate the concept of toy play as playing chess and pleasure as opposed to pain? **(B)** A preliminary design for a Wittgenstein's pinball machine: diagrams and mechanics or aesthetic calculus.

Wittgenstein, following his meeting with Turing (1937) and their subsequent dialog articulated the pros and cons a Universal Turning Machine both in *Philosophical Investigations* and *Foundation Of Mathematics*. Subsequently, the notions of 'machines', 'playing chess' and 'automata' are weaved into Wittgenstein's discussion of 'pain' in reiterating both his rejection of private language, his reiteration of logical grammar as underlining mathematics as a 'language' *and* his embrace of 'lifeforms' (*Lebensformen*) as an all encompassing concept.

This critical perspective is explored recently by Juliet Floyd's study. Unlike common interpretations of Wittgenstein's *Philosophical Investigations* that center on the importance of "language games" and their behavioral grammar, the concept of 'lifeforms' governs a different set of rules that act as a bridge or a set of nods between "logical calculus" which unlike the early conception of the *Tractatus* that assumes their bottom-up propositional chains, they are instead embedded in experience as "givens" and in as much "mathematically given". Such interpretation of Wittgenstein's 'lifeforms' comes very close to Husserl's

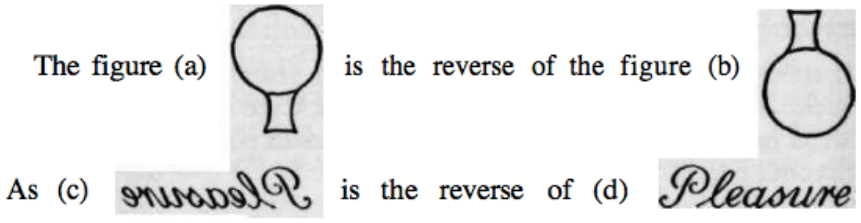
distinction between "formal" and "transcendental" logic in respect to "passive syntheses" of the "pre-given". As such the role of numbers and calculations is not simply based on conventions, socio-cultural grammar, or formalistic articulation of logic, but rather, embedded as a stratum of pre-phenomenal objects.

How to 'teach' philosophy as a 'toy'?

The Wittgenstein's Pinball Machine is based on experiential axis of pain pleasure.

The interactive sensation and sensorial input is connected in somewhat Pavlovian way with the playing of the pinball machine. Playing and scoring or hitting the 'right' and 'wrong' spots induce either pleasure and pain sensations through the player's VR gloves. The Wittgenstein's Pinball Machine is based on the interchangeable substitution of the concepts of *pain* with that of *play* in the toy's parameters and in relation to Wittgenstein's own deep connectivity in the analysis of pain in relation to language-game. How do we learn a 'language-game' a la Wittgenstein if not through behavioral modifications of ***rules*** and ***senses*** through playing or following the rules of a game, first by mimicking and then by regulating signified actions.

In his *Philosophical Investigations* Wittgenstein writes endless times about pain in relation and as an example of the conception of language-games. On the other hand, the notion of pleasure is incidentally and idiomatically only mentioned once in respect to a choice of *pleasure*. The illustration that Wittgenstein provides bellow, in his *Philosophical Investigations*, is of an inverted image and word 'pleasure'; fascinatingly the inversion of pleasure is not pain but the mirrored image of pleasure. Is that a disclosure of his own testament to his abandonment of 'pleasure' in favor of 'pain' in his work that engages so obsessively with game and play?



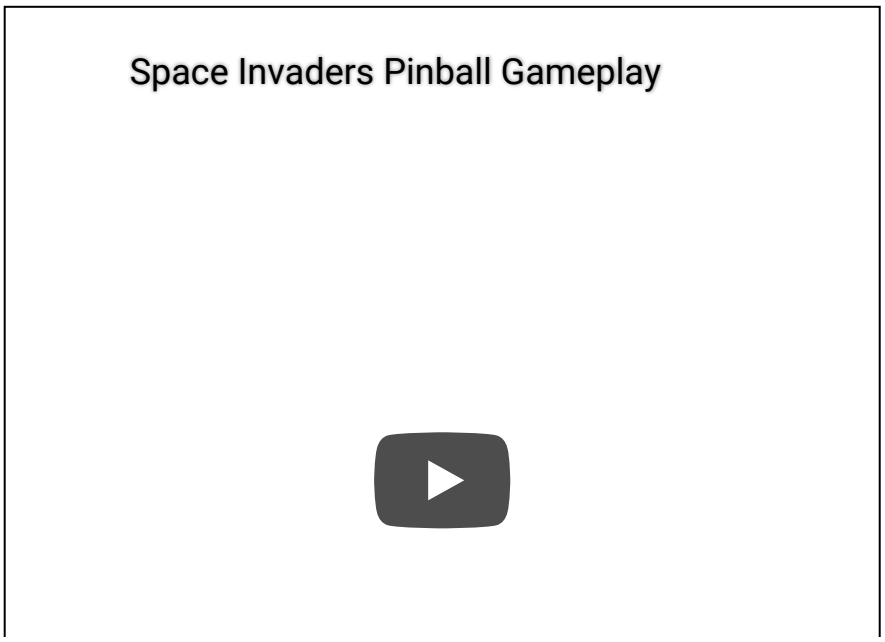
"But — I should like to say — there is a different difference between my impressions of (c) and (d) and between those of (a) and (b). (d), for example, looks neater than (c). (Compare a remark of Lewis Carroirs.) (d) is easy, (c) hard to copy." (i98«)

One should legitimately voice the question in what ways *pain* vis-à-vis language-game is different fundamentally from the notion of *pleasure*? Does pleasure differ in any fundamental way/s from pain in assisting to define a Wittgensteinian take on a language-game? As opposed to the two strata of language-games that can be either defined as the *primitive* tool oriented language building (slab, brick metaphors) or the hypothetical speculative stratum (e.g. how does one play chess?), *pain* is instrumental but equally constitutive for Wittgenstein's critique of private language.

Nonetheless, does *pleasure* (unlike pain) follows outside the inter-subjective perimeters of sensations and language? Can we have 'private' pleasures more than pains? And if not, are they equivalent in their linguistic-sensationalistic constitution than we are to probe them as incongruent but equivalent?

I am thinking here of Wittgenstein's philosophical obsession with pain (and not pleasure) not as explicable simply in psychological or psychoanalytical terms (e.g. Sado-Masochism) but rather as logically identifying *sensations* (be them pain or pleasures) as already given-sensations and as such the

linguistic matrix of sensations is intertwined with that of the language of sensation (i.e. how we speak and think about pain).



In this context I would argue that Quine's so called indeterminacy of translation points to the difference between *radical translation* and *linguistic translation* or *holophrasic indeterminacy* which not unlike Carnap's reliance on analyticity delineates the boundary conditions (albeit tentative) between logic and perception. Wittgenstein's *Kantian blind spot* is to turn 'pain' into both an exemplary or paradigmatic case of language-game and assume it to be extricated from the dialectical conception in regards to pleasure, which even before Kant is to be found in Burke.

In his *On the Sublime and Beautiful*, Burke (1729–1797) argues that,

"It seems then necessary towards moving the passions of people advanced in life to any considerable degree, that the objects designed for that purpose, besides their being in some measure new, should be capable of exciting pain or pleasure from other causes. Pain and pleasure are simple ideas, incapable of definition. […] There is nothing, which I can distinguish in my mind with more clearness than the three states, of indifference, of pleasure, and of pain. Every one of these I can perceive without any sort of idea of its relation to anything else. Caius is afflicted with a fit of the colic; this man is actually in pain; stretching Caius upon the rack, he will feel a much greater pain: but does this pain of the rack arise from the removal of any pleasure? Or is the fit of the colic a pleasure or a pain, just as we are pleased to consider it?"

Burke cannot be accused of conceiving the relation between pleasure and pain as that of phenomenal and psychophysical opposition. Rather, his triadic conception of the sensory axis of psychophysical experiences is positioning indifference as the sensation/condition, which relegates pleasure with pain as sensory extremes or poles.

To poke, provoke and invoke the significance of 'language-games'-Wittgenstein's philosophical toy is *pain*. A pinball machine that introduces physical principle of pleasure can retract and invigorate the learning agency from the domain of pure rules (i.e. logic) with the possibility of pure play (i.e. experiential combinatory). The Wittgenstein's Pinball Machine is thus a toy that its main purpose is to allow conditions under which *play* and *game* are in flux – systemic and axiomatic relations are non

binding and mutually non exclusive – and pleasure and pain are enacted through playing the toy (i.e. pinball machine) not as polar opposites along the axis of sensations but instead as sensorial manifestation of *generative indifference*.

Generative indifference can be construed on two different planes that involve the playing with a 'toy' or a pinball machine in particular as an aesthetic model.

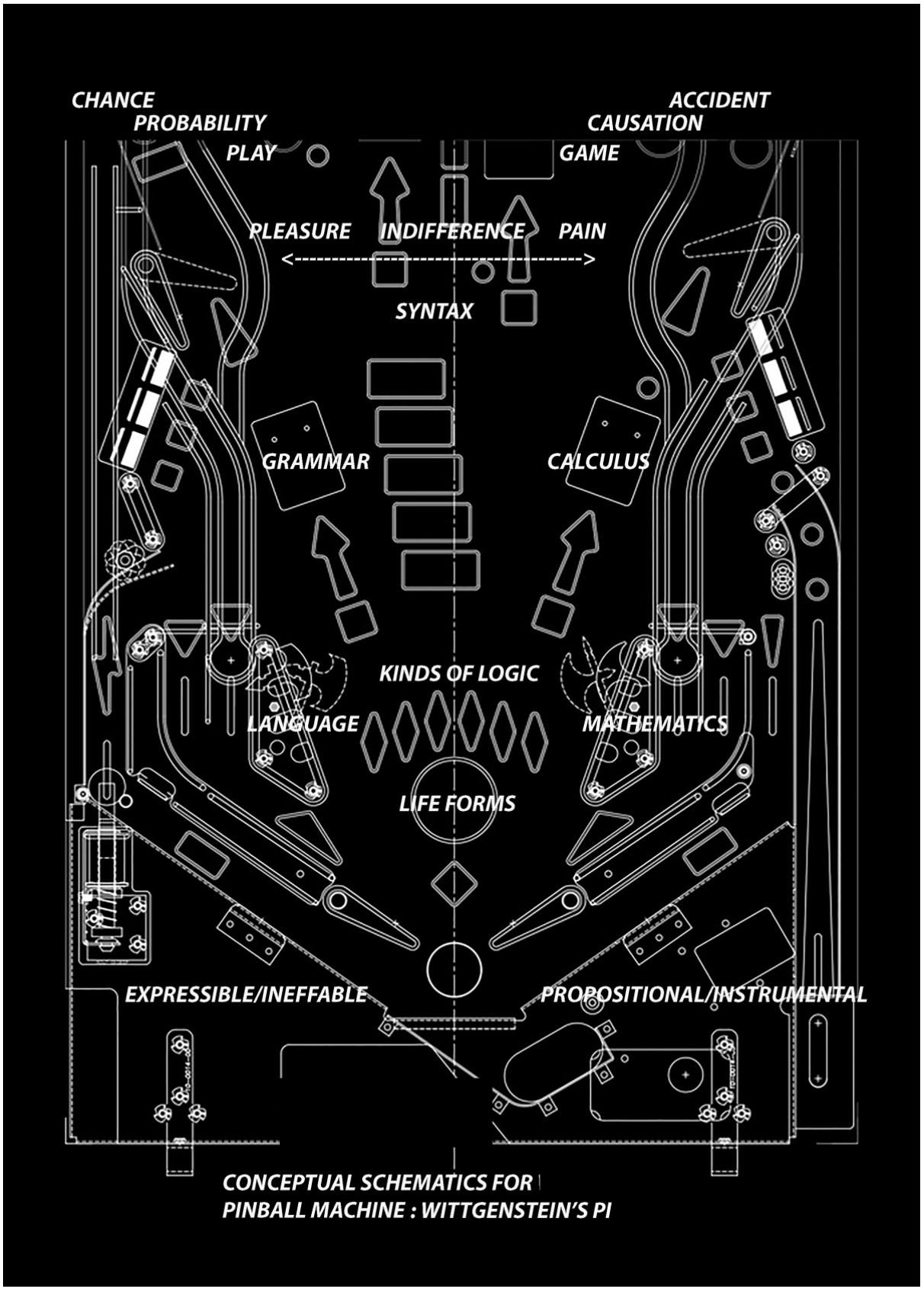
The first plane relates to the quasi equilibrium state/s in complex dynamical systems in which neither 'order' nor 'disorder' is discernable in terms of the system's entropy or "strange attractors." Such a state is typically behaving as fluctuating and oscillating conditions which are 'indifferent' to any anisotropic unfolding of processes. The pinball machine is vacillating between 'chaos' (pain) and 'order' (pleasure) or vice versa through a continuously interrupted indifference to either.

The second plane relates to the notion that a toy-aesthetics, following the Wittgenstein's pinball machine, mitigates pleasure and pain through the axis of indifference and not opposition (as suggested by Burke) and such indifference as opposed to either pleasure or pain is generative precisely because it can go or unfold either way depending on how the toy is interacted with as 'play' or 'game' with corresponding joy or disciplinary repercussions associated with each case. Following the model of toy-aesthetics the artist's aim is to occupy the axis of *generative indifference* since it allows *lifeforms* to unfold without preconditioning them to either binary or sensory bits.

In light of the concept of toy-aesthetics, *generative indifference* can be construed in relation to three constitutive processes:

(1) A 'play' not yet regulated into a 'game' – more extemporizing and less axiomatization occurring.
(2) CDP (complex dynamical processes) which like the case of dissipative structure are states of quasi-equilibrium where as perturbations non linear systems – in a chaotic state/s within a system can generate spontaneously and recursively nascent 'orders' or organizational identifiable aesthetic 'events' within the system's otherwise indifferent order/disorder parameters. The Wittgenstein's Pinball Machine thus assists us in addressing the grey zone or twilight zone between formed or signified sensations/concepts (such as 'pain') by designating a quasi-equilibrium flux that is generative precisely since its indeterminacy and flux is equally logical, linguistic and phenomenal.
(3) The concepts of 'pleasure' and 'pain' as underlying organizing principles are mitigated by a general field of indifference which like the Burekean axis is transitive and non-relative to either poles.

The Wittgenstein's Pinball Machine is extended between the dynamics of *play* (and chance) with its variations, improvisations and extemporizing as often enacted by children and as noted by Wittgenstein himself, and regulated regime of *game* (and accidents). Unlike the Kantian model of analyticity and contingency, the pinball machine is *structured* on the complex dynamics between laws and rules, and is a *lifeform* in itself – a testimony of how the possible and the actual are interchangeably flipping sides of order and disorder, or stochastic order and deterministic chaos. Toy-aesthetics exemplifies an analogous dynamics whereas the 'ineffable' and the 'instrumental' flow and are experienced as pain and pleasure through the neutral exchange between *generative indifference*.



The conceptual schematics for the *Wittgenstein's Pinball Machine* underlines key concepts from Wittgenstein's philosophy (especially *Philosophical Investigations*) and its application to the pinball mechanical configuration.

The idea of introducing 'pain' and 'pleasure' into a universal Turing machine (P-type machines) has been suggested by Turing who argued that,

"The organisation of a machine into a universal machine would be most impressive if the arrangements of interference involve very few inputs. The training of the human child depends largely on a system of rewards and punishments, and this suggests that it ought to be possible to carry through the organising with only two interfering inputs, one for 'pleasure' or 'reward' (R) and the other for 'pain' or 'punishment' (P). One can devise a large number of such 'pleasure–pain' systems." (Essential Turing, ed. Copeland, 2004)

Accordingly, "The configurations of the machine are described by two expressions, which we may call the character-expression and the situation-expression. The character and situation at any moment, together with the input signals, determine the character and situation at the next moment. The character may be subject to some random variation. Pleasure interference has a tendency to fix the character i.e. towards preventing it changing, whereas pain stimuli tend to disrupt the character, causing features which had become fixed to change, or to become again subject to random variation." (Ibid.)

The full scope of introducing 'pain' and 'pleasure' into Wittgenstein's pinball machine and which shares a possible constructing of a universal Turing machine is philosophically embodied in the concept of *Lebensformen* or Lifeforms which Wittgenstein developed fully after his encounter with Turing and his work.

Lebensform / Lifeform

As Juliet Floyd suggests, it is with the concept of *Lebensform* that Wittgenstein's explanatory argument on the relation between language and mathematics is shaped; and possibly as result of his encounter, reading and conversations with Turing.

As Floyd remarks,
"What Turing offered through his informal comparison between a human calculator and a machine domesticates the gap-free aspect of logic, just that aspect Wittgenstein had previously presented as central to logic with his earlier notion of a form series. In Turing's paper, "gap-free" reasoning, presented by formulating operational rules for generating internally related steps with a finite symbolism indefinitely far, is presented in terms of his "machines". Turing shows through his analogy how we can "break off" from a (logical) routine and begin another, coming to rest with our philosophical questions – at least momentarily – by proceeding, and then, later on, refashion what is "simple" by beginning again (cf. PI 133)."

"But now, in 1936-7, I believe that his perspective has finally gelled. From Russell's (and Gödel's) vertical, top-to-bottom and bottom-to-top axiomatic picture of the hierarchy, Wittgenstein has moved away, conceptually: through a disordered archipelago of well-founded but conventional calculi, to a serial ordering of language-games, and, ultimately, to a fluid, modular setting for human procedures, embedded in our ordinary ways of talking as these have evolved in everyday life. Turing's analysis of logic forwards just such a view. Our daily lives with 'apps' today evince and instantiate the perspective. They are *Lebensformen*."

The aesthetic experience as well as constitution of the *Wittgenstein's Pinball Machine* can be thought as an exemplification (and not representation, if to use Goodman's conception here) of Lifeforms. And as Floyd argues:

"Forms – logical and living ones – are linked, not ranked. In Wittgenstein forms have to do with procedures, routines, possibilities and necessities thereof – these are so ubiquitous. And so he self-inscribes and self-themathizes the forms of his own procedures in the PI. His remarks are deeply self-

embedded in if-thinking, in possibilities of procedures or phenomena, in loops and pieces of proposed and explored chains of argumentation."

Now, in order to fully engage with some of the pinball machine conceptual mechanics and its epistemological conundrums, below are some key citations from Wittgenstein which I am contextualizing here as a series of final reflections/refractions on the *Wittgenstein's Pinball Machine* and its relation to toy-aesthetics.
In his *Remarks on the Philosophy of Psychology*, Wittgenstein remarks that:

"Turing's Machine: These machines are humans who calculate. And one might express what he says also in the form of games. And the interesting games would be such as brought one via certain rules to nonsensical instructions. I am thinking of games like the 'racing games'. One has received the order 'Go on in the same way' when this makes no sense, say because one has gotten in a circle. For any order makes sense only in certain positions (Watson)". (RPP I : § 1096)

Does Wittgenstein talk here about his own sense or non-sense of a game such as a pinball machine where the interactions between the 'game' and its 'accidents' are expressions of Lifeforms?

In his *Philosophical Investigations* Wittgenstein poses the questions,

"Could a machine think ? Could it be in pain? – Well, it is the human body to be called such a machine. It surely comes as close as possible as being such a machine." (P.I. § 359: p. 120)

Wittgenstein's hostility towards psychology and in as much psychologism can be construed on two interconnected levels: the first pertaining to how we 'assume' pain (or pleasure) as non-mechanical as result of a false metaphysical theory about mentalistic constructs or language; the second an implicit affirmation or at least a neutrality in relation to A.I. and the possibility of a sentient machine not as a negation of human experience but rather as an explication of it.

In *Philosophical Grammar* Wittgenstein maintains the following:

"If one thinks of thought as something specifically human and organic, one is inclined to ask "could there be a prostatic apparatus for thinking, an inorganic substitute for thought?". But if thinking consists only in writing or speaking, why shouldn't a machine do it? "Yes, but the machine doesn't know anything". Certainly it is senseless to talk about a prosthetic substitute for seeing and hearing. We do talk of artificial feet, but not of artificial pains in the foot." (P.G. § 47: p. 105).

One, following Wittgenstein, may argue the twofold contention. That 'thoughts' like 'pain' or 'pleasure' or any sentient constitution are Lifeforms and hence are not positioned below or above each other in a logical hierarchy. Rather, the both obey the "language-games" enacted by humans or machines. And then, that "seeing" or "hearing" like the experience of pleasure or pain involve consciousness to the "language games" as a content of experience, namely, Lifeforms.

In his *Lectures on the Foundations of Mathematics*, Wittgenstein insists,

"It has been said very often that mathematics is a game, to be compared with chess. In a sense this is obviously false – it is not a game, in the ordinary sense. In a sense it is obviously true – there is some similarity. The thing to do is not to take sides, but to investigate". (Wittgenstein, Lectures on the Foundations of Mathematics, Lecture X (C. Diamond, 1976, p. 142).

Wittgenstein's neutrality lends itself to the Pinball Machine as an experimental test as well as an aesthetic model of the interplay between logical rules (e.g. chess, pinball machine) and mathematics.

Wittgenstein, in his *Philosophical Investigations* contends the following on machines and humans:

"157. Consider the following case. Human beings or creatures of some other kind are used by us as reading-machines. They are trained for this purpose. The trainer says of some that they can already read, of others that they cannot yet do so. Take the case of a pupil who lias so far not taken part in the training: if he is shewn a written word he will sometimes produce some sort of sound, and here and there it happens 'accidentally' to be roughly right. A third person hears this pupil on such an occasion and says: "He is reading". But the teacher says: "No, he isn't reading; that was just an accident".—But let us suppose that this pupil continues to react correctly to further words that are put before him. After a while the teacher says: "Now he can read!"—But what of that first word? Is the teacher to say: "I was wrong, and he did read it"—or: "He only began really to read later on"?—When did he begin to read? Which was the first word that he read? This question makes no sense here. Unless, indeed, we give a definition: "The first word that a person 'reads' is the first word of the first series of 5 o words that he reads correctly" (or something of the sort).
If on the other hand we use "reading" to stand for a certain experience of transition from marks to spoken sounds, then it certainly makes sense to speak of the first word that he really read. Pie can then say, e.g. "At this word for the first time I had the feeling: 'now I am reading'."
Or again, in the different case of a reading machine which translated marks into sounds, perhaps as a pianola does, it would be possible to say: "The machine read only after such-and-such had happened to it—after such-and-such parts had been connected by wires; the first word that it read was ….". But in the case of the living reading-machine "reading" meant reacting to written signs in such-and-such ways. This concept was therefore quite independent of that of a mental or other mechanism.—Nor can the teacher here say of the pupil: "Perhaps he was already reading when he said that word". For there is no doubt about what he did. —The change when the pupil began to read was a change in his behavior, and it makes no sense here to speak of 'a first word in his new state'."

Beyond Wittgenstein's behaviorist contention about a *reading machine* and *other* kinds of humans turned into a reading machine there lies an extraordinary argument regarding A.I., namely, not how or if reading machines can read or think like humans — a certain mentalistic pitfall — but instead, how humans who read can be considered beyond doubt to be readers and only according to mechanical rules? Can *Wittgenstein's Pinball Machine* be seen as an integrative game/play that tests the interplay between mechanical functions and rules as reversible? To that Wittgenstein argues in *Logical Investigation* that the sheer act of playing a game does not necessarily define its meaning or rules but only constitutes its *possible interoperation*.

As Wittgenstein contends:

"198. "But how can a rule shew me what I have to do at this point? Whatever I do is, on some interpretation, in accord with the rule."—That is not what we ought to say, but rather: any interpretation still hangs in the air along with what it interprets, and cannot give it any support. Interpretations by themselves do not determine meaning."

Furthermore, Wittgenstein asks,

"'Then can whatever I do be brought into accord with the rule?'—Let me ask this: what has the expression of a rule—say a sign-post—got to do with my actions? What sort of connexion is there here? —Well, perhaps this one: I have been trained to react to this sign in a particular way, and now I do so

react to it.
But that is only to give a causal connexion; to tell how it has come about that we now go by the sign-post; not what this going-by-the-sign really consists in. On the contrary; I have further indicated that a person goes by a sign-post only in so far as there exists a regular use of sign-posts, a custom.
199. Is what we call "obeying a rule" something that it would be possible for only one man to do, and to do only once in his life?—This is of course a note on the grammar of the expression 'to obey a rule'".

Philosophical grammar is based on language-games but it does not have or is constituted by "rules" the way games are. Moreover, following the rules and obeying the rules are not the same procedures; let alone interpreting the 'rules' of a game which may deflect and define the game continuously. The *Wittgenstein's Pinball Machine* is the exemplification of an aesthetic model wherein the possibilities of discerning the 'rules' of the game (toy) is exponentially inverted by the sensations of 'pain' and 'pleasure' as intertwined with the playing of the machine (toy).

For Wittgenstein, following a game's rules imply in as much the possibility of unfollowing or even defying them and such apparent "paradox" (since he held that there are no real paradoxes) is indicative of the very nature of rules as lifeforms, logical and enacted "grammar" at once; much like Turing's idea for a universal machines in which similarly the interaction with "rules" (e.g. simulating input) is always *slower* than their logical inferences (e.g. machine's bits).

In *Philosophical Investigations* Wittgenstein observes that,

"201. This was our paradox: no course of action could be determined by a rule, because every course of action can be made out to accord with the rule. The answer was: if everything can be made out to accord with the rule, then it can also be made out to conflict with it. And so there would be neither accord nor conflict here. It can be seen that there is a misunderstanding here from the mere fact that in the course of our argument we give one interpretation after another; as if each one contented us at least for a moment, until we thought of yet another standing behind it. What this shews is that there is a way of grasping a rule which is not an interpretation, but which is exhibited in what we call "obeying the rule" and "going against it" in actual cases. Hence there is an inclination to say: every action according to the rule is an interpretation. But we ought to restrict the term "interpretation" to the substitution of one expression of the rule for another."

On *automata,* Wittgenstein in *Philosophical Investigations,* makes a surprising claim:

"'I believe that he is suffering.'——Do I also believe that he isn't an automaton?

Even if someone had a particular capacity only when, and only as long as, he had a particular feeling, the feeling would not be the capacity."

×××

What happens to the player of a *Wittgenstein Pinball Machine* as the process of experiencing pain and pleasure (and moments of active indifference) is exceedingly associated with the game's rules? Does such associative predicament renders one *human* as opposed to an *automaton*. Regardless to the game's result, sentience and cognizance are relegated not as a *capacity* of either the machine or the player but instead to the way we construe the 'rules' as 'logical' or 'syntactical' compatible with being aware of the machine's dynamics as analogous to lifeforms.

Wittgenstein's Pinball Machine is a preliminary sketch for a game that exemplifies an aesthetic model conforming both to Wittgenstein's notion of Lifeforms and to toy-aesthetics but it also involves complex dynamical systems which will be further explored in my next installment on the autopoiesis of toys.

References

Adorno, W Theodor. Aesthetic Theory
Copland, B. Jack. *The Essential Turing Seminal Writings in Computing, Logic, Philosophy, Artificial Intelligence, and Artificial Life plus The Secrets of Enigma*, Edited by B. Jack Copeland CLARENDON PRESS OXFORD 2004
Goodman, Nelson. Fact, Fiction and Forecast
Goodman, Nelson. Languages of Art: An Approach to a Theory of Symbols
Goodman, Nelson. Ways of Worldmaking
Juliet Floyd Chains of Life: Turing, Lebensform , and the Emergence of Wittgenstein's Later Style in Nordic Wittgenstein Review 5 (2) 2016
Turing, A. M. (1936). On Computable Numbers, with an application to the Entscheidungsproblem, Proc. Lond. Math. Soc. (2) 42 pp 230-265 (1936); correction ibid. 43, pp 544-546 (1937).
Turing, A. M. (1950). Computing machinery and intelligence. Mind, 59, pp. 433–460.
Turing, A. M. (2004). Can digital computers think?, in The Essential Turing, edited by B. J. Copeland, Oxford, Oxford University Press.
Wittgenstein, L. (1958). Philosophical Investigations
Wittgenstein, L. (1976). Wittgenstein's Lectures on the Foundations of Mathematics, Cambridge, 1939, ed. Cora Diamond, Chicago – London, The University of Chicago Press.
Wittgenstein, L. (2001), Remarks on the Foundations of Mathematics, Third edition, Rush Rhees (Editor), G.H. von Wright (Editor), and G.E.M. Anscombe (Editor, Translator), Oxford, Wiley- Blackwell.

2 thoughts on "On Toy Aesthetics: Wittgenstein's Pinball Machine (part 1)"

Assem A. Hendawi says:
July 11, 2018 at 9:29 AM
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mirskontsa says:
September 1, 2018 at 8:50 PM
You should definitely pitch the idea of Wittgenstein's Pinball Machine on kickstarter!