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SETTING THE STAGE FOR THE SUN: INTERROGATIONS OF PERFORMANCE OF FLICKER

SONJA BLUM INDEPENDENT ARTIST



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I. PROLOGUE

We become attuned to the sun as a source of life: flickering light turns into questions and answers, nudged in stillness, to feel and see, anew, formed and unformed things, sensations, images, notions of the universal laws and our place among the stars. Retracing the steps taken before by many throughout history, of opening up dream-like states triggered by flickering light of the sun, to become one with the sun, with the universe, with it all, for a moment, to see without blinders on, to allow a flushing and washing rhythmically of the layers of crust and stiffness in body and thought. From trains, boats, street corners, at the tops of buildings, through trees in full bloom, lush with fluttering leaves, a motion of one's own hand. In this work, I deploy performance as a mode of thinking and philosophy a mode of experiencing. I journey through text, images and a short film, performing philosophical and scientific ideas of flicker.

Performance is a frontier at which a particular kind of experimentation is possible, interrogating reality and the representation of it. Performance is staged and its staging repeated in iterations which can never be exactly the same, and, as such, performance foregrounds questions surrounding the relation between static images, static bits of information, and three-dimensionality. In a historical moment of increasingly abstract mediation of reality through infinite numbers of digital data points analyzed by algorithms and machines inaccessible to any individual and divorced from lived experience, performance is a form of possibility for staging investigations of alternate modes of interrogating reality through what Harney and Moten (2021) frame as individuation and sovereignty. In contrast to interrogation of reality mediated by reductionist methodologies and analysis of 'big data' (Marx 2013), performance is experienced in three-dimensional space: an embodied, eye-witness experience of performers and audience, participating in an unmediated interrogation of reality personally; an enactment of escape and transgression outside of framework of dominant knowledge production mechanisms.

Returning to the sun, we take flicker as inspiration for asking: if the metaphor of performance can be applied to flicker (the sun is 'dancing'), can we make ideas dance? Here, we let ideas of flicker unfold through an embodied performative experience: 1. the methodology of staging is applied to the realm of philosophical and scientific ideas—the foundations of hegemonic systems at large; 2. performance becomes a frontier in which questions surrounding hierarchy of epistemological frameworks can be posed. At stake is shedding of a certain complacency of standard methodologies of arriving at knowledge.



II. HISTORIES OF FLICKER – INDUCED HALLUCINATIONS

Flickering light can induce hallucinations in almost anyone. Theories on how this occurs are centered on interaction between the externally imposed flicker oscillatory pattern and the internally generated brain oscillatory patterns. It has long been postulated that the basis of consciousness is related to oscillatory patterns of the brain: from Yves Delage in 1919, to Crick and Koch in 1990, to Wolf Singer, Georgy Buzsáki and others in the last two decades (Uhlhaas et al. 2009; Buzsáki and Tingley 2018; Valencia and Froese 2020).

Flicker is a coordinated beat and frequency of 8 to 12 Hz or higher which can be superimposed on brain's alpha rhythm when a subject sits in front of a light source with their eyes closed.¹ Rhythms of the brain are variable, changeable depending on whether the subject is in a resting state or attempting action, eyes open or closed, encountering stimulus or not. At baseline, it appears that different cortical regions of the brain settle at different frequencies, with alpha-band oscillations (8–12 Hz) in the occipital cortex (where visual processing occurs), beta-band oscillations (13–20 Hz) in the parietal cortex, and fast beta/gamma-band oscillations (21–50 Hz) in the frontal cortex.

Uniform luminance flicker stimulation is thought to resonate with the natural frequency of cortical cells, and to evoke waves of cortical activity in the visual cortex, which induces the conscious experience of the hallucinations (Billock and Tsou 2012). Hallucinations strength peaks around flicker frequency of 11 Hz but some lines of evidence suggest that the best frequency for inducing hallucinations is a multiple of intrinsic oscillatory rhythms in the cortex (Pearson et al. 2016).

In the year 1556, Nostradamus sat on Catherine de Medici's rooftop watching the sun with his eyes closed, interrupting the light with his hand spread. It is said this way, he induced visual hallucinations opening up a state of being in which his prophecies arrived (ter Meulen, Tavy, and Jacobs 2009). This story may be the earliest historical mention of flicker induced hallucinations. Subsequently, for over two hundred and fifty years, there has been little mention of the phenomenon of flicker induced hallucinations. The rise of the Enlightenment and skepticism, and the diversification of disciplines, firmed up methodologies of induction and deduction, and amplified the concept of a world of calculable regularity.

Mentions of flicker induced hallucinations appeared again around the year 1819 in the writings of the burgeoning field of neurology, first by Jan Purkinje, who reported swirling geometric visual patterns brought on by diffuse flickering light when waving his hand between his eyes and a gaslight, and the physicist David Brewster who, while experimenting with light polarization inventing the kaleidoscope and stereoscope ("David Brewster" 2022), experienced them when running alongside evenly spaced railways (ter Meulen, Tavy, and Jacobs 2009). This was again forgotten until around 1934 when Adrian and Matthews experimented with automobile headlights shining through a rotating wheel with spokes, and Smythies (1959) described dark, light, and after-image phases of flicker induced hallucinations.

The obscure history of flicker was mentioned in a text titled *The Living Brain*, in which W. Grey Walter described flicker induced hallucinations and their historical mentions, integrating them together

with the newly emerging investigations of brain electrophysiology through use of electroencephalograms and other forms of recordings (Walter 1953). William Burroughs, who had a wide curiosity to uncover ancient, obscure and occult texts, stumbled upon the book on one of his walks in Paris, and read about the hidden powers of flicker. He shared these with his friend Brion Gysin, both at the time living cheap hotel in a narrow alley in the Latin Quarter, later referred to as the Beat Hotel. They met in 1954 in Tangier, and from then on collaborated on art and magic. They held an interest in the occult, and in challenging firmly established dogmas of the Enlightenment. A 1958 diary entry of Gysin's reports he had been traveling on a bus in southern France passing by a row of trees, with sun flickering through, as he started to hallucinate:

An overwhelming flood of intensely bright patterns in supernatural colors exploded behind my eyelids; a multi-dimensional kaleidoscope whirling out through space. The vision stopped abruptly when we left the trees. (Gysin and Wilson 2012, 141)

He confided in Ian Somerville, who had been a mathematician, and asked him to make a stroboscope to mimic the effect of the flickering light through the trees. Somerville created a cylinder with holes and placed it on a 78 RPM turntable with a light bulb within, and when the turntable started spinning the light would come out with a regular frequency within the 8 to 12 Hz alpha range mimicking flicker. Burroughs and Gysin shared an excitement that this was a way to harness the visionary potential of light. The poet Alan Ginsberg wrote about this device as the dream machine. Gysin foresaw a great future for his device eventually replacing the television set in every home. It is reported that he made connections, for example, with the Phillips Corporation who sent a representative to the Beat hotel, but this went nowhere (Sheehan 1997). The company saw no commercial potential and feared the seizure inducing potential of flickering light. The dream machine never came into mass production despite Gysin's best attempts.

In the 1960s, Paul Sharits (Burchfield Penney Art Center) started to create non-narrative, non-objective works he called 'flicker films,' exploring elements of film. Marcel Duchamp's *Anemic Cinema* (1926) also follows similar threads much earlier in the 1920s. Hollis Frampton (1971) is credited with defining the structural cinema movement, sacrificing elements of film to investigate formal issues at the expense of traditional narrative content. Bruce McClure's projector performances in the 1990s used 'Roto-Optic' devices with discs painted with colored patterns mounted on square floor fans rotating at 1200rpm, and viewed under stroboscopic light (Halter 2010).

Across these encounters, the term flicker is related to the Sun, structuralist theory and non-objective, eureka moments, visions of the future, reason, dogma, anti-dogma, hallucinations, rhythms, or the brain. The fields of information and data points is non-linear, non-hierarchical, and is not neat as an idea. It flickers a code, it is information in itself, a dance, a performance, as a counter to the exclusionary dominance of reductionist logic of the Enlightenment on the one hand and reaching for an expanded field of possibility of knowledge building frameworks.



III. FIELD OF IDEAS AS FLICKER

The pre-Socratic philosopher Heraclitus, known as the originator of logic, held the belief that it is not possible to say anything true about the world, which by its nature is in constant flux (you can never step into the same river twice). A work-around for this problem was to maintain a consistency among beliefs written as sentences, a system of thinking and writing we now refer to as logic. Sentences can be true, even if the world itself cannot be true, and consistency can be maintained in how beliefs about the world are stated (Hodges 2001). At the same time, a belief has dominated that the senses, the embodied experience, are illogical, invalid somehow, in line with a notion that senses bring us back to flux, time, and change, to the realm where 'truth' does not exist.

Can we invent a way of working through ideas embracing the flux, immersed in it, rather than extracting points of data/ statements/ sentences, reductions of the whole? Can a search for 'truth' be performed within flux, dipped back into the realm of the senses and embodied experience? Can a philosophy built of this yield a foundation of hegemonic systems of a completely different kind, of a kind that perhaps does away with hegemony as obsolete, when all is in flow, in flux? Hegemonic systems which we know now, perhaps figments of imaginations of sets of postulates gone awry in minds separated from body, separated from the flow, severed heads of Cartesian intellectual inheritance.

What happens if ideas are presented in a way that mimics flashes of flicker? So, in a sense this is where the ideas perform, by taking the form of flicker. The formal framing within postulates, borrowing form of logic, becomes the staging of a performance of ideas. Flashes of ideas, tied together through the formal veil of postulates, foregrounds questions of legitimacy of a form of play with ideas in which one postulate may not neatly lead to the other, and, together, they do not by design fulfill the job of neatly packaging a message. Rather, a flickering field of ideas is presented, and each read may offer another line of flight, another conclusion, opening up a horizon of ideas rather than narrowing to a point.

in relation to knowledge/
the in-between/
the relation of the body to the sun/
experimenters facing the world/
starting from scratch/
letting go into the vastness of possibility/

finding resonance/

/ flickering between extraction and wholeness/
/ flickering between isolation and belonging/
/ flickering between pinning an idea down and the whole world/

looking for magic /
learning and relearning to play/

Postulate 1: Play (Winnicott 2005) is a mode of keeping things alive in the field of philosophical and scientific ideas. An attempt to consider a role reversal of philosophical and scientific ideas is intentional play, using the idea of flicker, for performing a flickering between determinism, contextualization, experience, and perception of the encounter with ideas.

Postulate 2: A performance can, through a field of data points, reveal answers, thoughts, new information for consideration, to be encountered in a non-linear/ not prearranged way, a veil is thrown over a set of ideas/ movements/ perceivable content which can flash/ flicker thoughts.

Postulate 3: Ephemera is evidence (Muñoz 1996), not intended to negate knowledge arrived at through scientific discovery. Rather, as a complementary process, anti-rigor and anti-evidence function to reformulate materiality in an anti-normative, counter-hegemonic way, a form of decolonisation of thought.

Postulate 4: Anticipatory learning is embedded in performance, as a labor of imagining the world differently, via the undercommons (Harten and Moten 2013) of philosophy. A form of flickering ideas, not arranged in a sequence that follows strict temporal and spatial order, decenters hegemonic Enlightenment and structuralism paradigms of arriving at and coding knowledge.

Postulate 5: Philosophies expand in potential for illumination when viewed outside of strict lineages of thought. In considerations of flicker and relationship of internal and external worlds in knowledge, the Ayurvedic notion of Pratyksa (perception)—the basis and ground for all forms of knowledge—is relevant, as is intromission theory of vision put forth in Ibn al-Hayathm's *Book of Optics*.

Postulate 6: Coding knowledge can happen outside of words and numbers. We need expanding notions of how we mark what is known. For example, taking inspiration from Wu Tsang and Fred Moten's *Gravitational Feel* (2019), using numerous strands of fabric rope, which draw inspiration from "quipu" or talking knots—a sophisticated form of Incan data and record collection using knotted string, which may have been used to map pilgrimage routes or act as memory tools in retelling oral histories.

Postulate 7: Centering anti-normative, feminist, counter-hegemonic knowledge making systems, ways of moving, of being alone and together, of making new work, of seeing, is breaking the dominant beams of light of culture and science into a spectrum, sub-particles of possibility, to build new ways of thinking and being.

IV. PERFORMANCE

To synthesize possibility
A solution
To the problem
of encounter of bodies
Living and inanimate
A dream of something new
arising from the combination
of the moving body
within the moving world.

Watch: <https://vimeo.com/663744030/fed5f5700f>

My own fascination with flicker began on a repeated daily train commute from Atlantic Terminal Brooklyn to Long Island, which I took in early mornings eastward and back to Brooklyn in the afternoons. Blinded by the sun flashing and pulsating from behind cloud formations, warehouses, brownstones, graffiti, and people whizzing past, presenting themselves in snippets of instant visual flash, induced rich textures of imagination. This space filled with imagination became a cherished experience to inhabit on a daily basis. I started to snap photos, repeated photos flashing over the flashing sun, over and over again, capturing the snippets we were passing, sometimes in blurrrrr. It did something, it made it possible to write more truly, more presently, to have bold new ideas present themselves.

It reminded me of travel I had done in the past, by plane, by train, the special similar feeling of inspiration that would possess me with encounter of the open road. I thought, what is special about moving? I think back to the idea of the origins of the nervous system, and suggestions that the origins of the nervous system are purely related to evolution of movement, so that all that ever came after that in evolution of how we know, think and consider, is built on a foundation concerned with and responsive at its core to movement.

Perhaps the very core of the possibility of what the nervous system can process and how it is intimately tied to movement and resonance; passing images, flickering images may have something to do with heightening and replicating the very core of the nature of the nervous system. Is flicker part of the essence of the encounter of the moving body with moving world? A movement machine, whose motor actions are in relation to the world it is moving past. So perhaps it is in movement that the optimal possibility of the nervous system becomes most palpable and apparent. If so, then what is this optimal possibility of the nervous system? To synthesize possibility, a solution to the problem of encounter of bodies, living and inanimate, a dream of something new arising from the combination of the moving body within the moving world.

The sun, as the source of light and life, inspires us to look again, to look more deeply, and to not be afraid to stare right at the bright light which folds around to suture the incisions and ruptures of extracted body and earth, snapshots of movements and ideas frozen in time, extracted from flux, to return to continuous movement, a breathing, a return to life, to dream the world anew.

Notes

¹ Brain activity is characterized by distinct intrinsic rhythms in variable frequencies most commonly alpha, beta, theta and gamma. Theta/ gamma coupling for example is often discussed in relation to hippocampus functioning in learning and memory, whereas alpha rhythms are associated with general arousal/ wakeful state, and so on. External stimuli can find resonance with internal brain rhythms, and this is what happens with flicker of certain frequencies. For further reading see ter Meulen, Tavy, and Jacobs 2009; Hasselmo and Stern 2014; Mauro, Raffone, and VanRullen 2015; Buzsáki and Tingley 2018.

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Biography

Sonja Blum works across multiple media through a veil of intuition, memory, and scientific method, using play, to consider how modes of knowledge production and world building are legitimized.

Recent and current exhibitions include: *I Dialogue, Kinch*, Belmacz Gallery, London (2021), *Anti-Fear / Protiv Straha*, Footnote Centre Belgrade Serbia Youth Biennial 2021, *Incision // falling together, holding apart*, Center for Performance Research, New York (2019), *And Apollo*, Take Care Gallery, Los Angeles (2019); *Fear of Revolution II*, Dixon Place, New York (2018); *Fear of Revolution*, Dixon Place, New York (2017); *Digital memory prosthetics*, REVERSE Gallery (2016), *To the left of the pantry and under the sugar shack*, La Mama, New York (2016).

Sonja holds an MFA from the School of the Art Institute of Chicago (2019). She lives and works in New York City.

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