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Jacques Lacan  
Seminar III: The Psychoses (1957)

*The Seminar of Jacques Lacan: Book III: The Psychoses 1955-1956*, tr. Russell Grigg,  
London and New York, NY: W. W. Norton & Company, 1993, p. 138, pp. 147-49 (excerpts)

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Josh Berson  
Forced Desynchrony

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This text presents transcript excerpts of two of Jacques Lacan's famed seminars, both given during an insufficiently lit, foggy Parisian February in 1956. Grounded in Melanie Klein's studies on language acquisition in childhood, Lacan, the *enfant terrible* of psychoanalysis, explains here that a precondition for an infant to sense the "Real" is its entry into the register of the symbolic, that is, the register of language as such, and its protoforms of differentiation. In this seminar, Lacan provides a sensual example, the "peace of the evening" as an "attenuation of contours and passions," and goes on to ponder the apparent experience of day and night's alternation, and, by extension, light and dark as primordial signifiers. For him, the basis of this experience is structurally contingent on the symbolic opposition of night and day; his example for countering this "illusion of experience" is the noncircadian sleep rhythm of the newborn. Reflecting and departing from Lacan's quasi-ontological explanation of the symbolic formation of sleep, anthropologist Josh Berson tackles the indexical dimension of changes in our material existence and chronobiological rhythms. In his essay, Berson addresses the ways in which mobility, precarity, hypervigilance, our psychic economies, and the continuous rhythm of zeitgebers, produce novel modes of presenting the self through the deployment of devices

and apparatuses that frame our circadian movements. We are desynchronized, poly-rhythmic creatures belonging neither to night nor day, but rather to a new temporality that is already in place.

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Jacques Lacan

(1901-1981) was a French psychoanalyst and psychiatrist who reinterpreted Sigmund Freud's work and ideas, incorporating approaches from linguistics, structuralism, and set theory. From 1951, Lacan held weekly seminars in his Paris apartment for twenty-seven years, developing most of his thinking through this format; in fact, his writings primarily exist as mere "notes." Although Lacan's enigmatic work was widely disputed, it has had a significant impact on developments in twentieth-century critical theory, literary theory, philosophy, film theory, and feminist and queer studies, as well as on clinical psychoanalysis.

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Josh Berson

is an anthropologist and media artist. His work asks how our ways of using and caring for our bodies coalesce into registers and how we construct our environment to support particular registers of bodily life. His current work focuses on how our rhythms of arousal and vigilance are changing as urbanicity, mobility, noisiness, precarity, and an ongoing reconfiguration of the boundaries between animate and inanimate become modal features of human inhabitation.

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## Jacques Lacan Seminar III: The Psychoses

*On the signifier in the real and the bellowing-miracle*

[...]

I don't want to give an overly philosophical discourse here but want to show you for example what I mean when I tell you that discourse is essentially directed at something for which we have no other term than *being*.

I ask you, then, to think about this for a moment. You are at the close of a stormy and tiring day, you regard the darkness that is beginning to fall upon your surroundings, and something comes to mind, embodied in the expression, *the peace of the evening*.

I don't think anybody who has a normal affective life is unaware that this is something that exists and has a completely different value from the phenomenal apprehension of the close of the clamor of the day, of an attenuation of contours and passions. There is in *the peace of the evening* both a presence and a choice from everything that surrounds you.

What link is there between the expression *the peace of the evening* and what you experience? It's not absurd to ask oneself whether beings who didn't give this peace of the evening a distinct existence, who didn't formulate it verbally, could distinguish it from any of the other registers under which temporal reality may be apprehended. This might be a panic feeling, for example, over the presence of the world, an agitation that you observe at that moment in the behavior of your cat which appears to be searching left and right for the presence of a ghost, or this anxiety which, although unknown to us, we attribute to

primitive peoples over the setting of the sun, when we think they are perhaps afraid that the sun will not return—which, moreover, isn't unthinkable. In short, a feeling of disquiet, of a quest. There's something here—isn't there?—that leaves intact the question of what the relationship is between this order of being, which has its existence equivalent to all sorts of other existences in our lived experience, and which is called *the peace of the evening*, and its verbal expression.

We can now observe that something quite different happens according to whether we, who have called up this peace of the evening ourselves, have formulated this expression before uttering it, or whether it takes us by surprise or interrupts us, calming the movement of agitation that dwelled within us. It's precisely when we are not listening for it, when it's outside our field and suddenly hits us from behind, that it assumes its full value, surprised as we are by this more or less endophasic, more or less inspired, expression that comes to us like a murmur from without, a manifestation of discourse insofar as it barely belongs to us, which comes as an echo of what it is that is all of a sudden significant for us in this presence, an utterance such that we don't know whether it comes from without or from within—*the peace of the evening*.

[...]

*On the rejection of a primordial signifier*

[...] I'm lighting my lantern and I shall therefore tell you my thesis. I'm going to tell it to you the wrong way round—that is, by situating it on this genetic level that seems to be so necessary for you to feel at ease. I shall tell you afterwards that this isn't it, but still, let's begin by saying that if this were it then it would be as I'm about to say it is.

It's a question of a thesis involving the entire psychical economy, which is important for an understanding of the confused debates still going on over the Kleinian fantasmatic, for the refutation of certain objections made against it, and also for better situating what it can truly or fruitfully contribute to an understanding of the precocity of the repressions it implies. As a matter of fact, contrary to what Freud says, that there is no repression properly so-called before the decline of the Oedipus complex, the Kleinian theory on the other hand entails the claim that repression exists right from the earliest pre-oedipal stages.

My thesis may equally throw light on a contradiction concerning autoerotism that appears insoluble in Freud himself. On the one hand he talks about the primitive object of the first mother-child relation. On the other he formulates the notion of primordial autoerotism, that is to say, of a stage, however short we suppose it to be, in which there is no external world for the child.<sup>1</sup>

The question is that of the human being's primordial access to his reality insofar as we assume that there is a reality correlative to him—an assumption always implied at the outset of this theme, but which we also know that we shall have in part to abandon, because there would be no question about this reality were it itself not constantly being called into question. Is there anything in man that has this both enveloping and coapted character which causes us to invent the notion of *Umwelt* for animals?

I point out to you in passing that we make use of this hypothesis concerning animals to the extent that an animal is for us an object and that there are conditions that are in fact strictly

<sup>1</sup> See *Three Essays on the Theory of Sexuality*, SE 7:181–84 & 222.

indispensable to its existence. We're happy to investigate how an animal functions so as always to be in harmony with these primordial conditions, and this is what we call an instinct, an instinctual cycle or instinctual behavior—if there are things that aren't in there, one has to assume that we can't see them, and since we can't see them we're happy, and in fact why shouldn't we be?

It's very clear that this is inadequate where man is concerned. The open and proliferating nature of his world prevents us from making it into his biological correlate. This is where I try, because it seems coherent and useful for me to do so, to differentiate for you between the three orders of the symbolic, the imaginary, and the real. It's abundantly clear that everything that our analytic experience shows us can be satisfactorily classified into these three orders of relationships, the question being at what moment each of these relationships is established.

My thesis, and perhaps it will give the answer to the enigma that for some of you my purple passage of last time on the peace of the evening seems to have consisted in, is as follows—reality is *at the outset* marked by symbolic nihilation [*néantisation*].

Although all of last year's work prepared us for it, I'm nevertheless going to illustrate it once again, even if only so as to come back to this peace of the evening that got such a mixed reception.

This is not a detour that, as Plato says, is discordant or lacking in analytic tone. I don't think I'm being at all innovative. If you read Freud's text on President Schreber you will see that, as a clinical argument for understanding the said President, he explores the function that Nietzsche's saga in his *Zarathustra*, called *Before the dawn*, played for another patient of his.<sup>2</sup> If you refer to this moment—it was precisely so as not to read it out to

you that I indulged in this invocation of the peace of the evening—you will see the same thing represented I wanted to bring to your attention a week ago, which I'm going to put to you again now in speaking to you about daytime.

The day is a being distinct from all the objects it contains and manifests, it's probably even more weighty and more present than any of them, and it's impossible to think of it, even in the most primitive human experience, as the simple return of an experience.

It suffices to mention the prevalence of a rhythm of sleep in the first few months of human life for us to have all sorts of reasons to believe that it isn't due to any empirical apprehension that at a given moment—this is how I illustrate the initial symbolic nihilations—the human being detaches itself from the day. The human being is not, as everything leads us to think is the case for the animal, simply immersed in a phenomenon such as that of the alternation of day and night. The human being poses the day as such, and the day thereby becomes presence of the day—against a background that is not a background of concrete nighttime, but of possible absence of daytime, where the night dwells, and *vice versa* moreover. Very early on, day and night are signifying codes, not experiences. They are connotations, and the empirical and concrete day only comes forth as an imaginary correlative, originally, very early on.

That's my supposition, and seeing that I speak from the genetic point of view, I don't otherwise have to justify it in experience. It's structurally necessary to admit a primitive stage in which the world of signifiers as such appears.

<sup>2</sup> SE 12:54–55.

# Josh Berson

## Forced Desynchrony

for Carol Ciacci

### Freerunning

At twenty-three I had my first episode of major depression. This had a number of lasting consequences. For one thing, I lost the ability to experience pleasure and desire. I write *lost the ability* but that suggests that the experience of pleasure and desire typically demands concentration. What I lost was simply the experience of pleasure and desire. For another, I stopped sleeping through the night. At the end of eight years, pleasure and desire had come back, and they have stayed, even through a second episode. But sleep—it has been fifteen years now—has never been the same. Unless I am profoundly jet-lagged, I never sleep through the boundary between two consecutive sleep cycles. Every ninety or 100 minutes, at the conclusion of REM sleep, the period we associate with dreaming and twitching of the eyes, and with immobilization of the body by an endogenous inhibition of skeletal motoneurons, I wake up. Often—I know I'm not alone in this—I awake before the GABA has cleared my bloodstream and find myself paralyzed.<sup>1</sup> Invariably I have rolled over onto my back, and I lie there for a minute or two, motor pathways spiking impotently, struggling to lift my chest.

I'm sitting at my light box and so I shall tell you my thesis: a profound shift is underway in the economy of vigilance, the network of recurring gestures by which we ascribe value to arousal, alertness, motoric presence, desire. The sum of these gestures is a motoric metrical structure, a hierarchy of rhythmic pulses in the stream of movements that carry us through the day. This is (provisionally, problematically) *internal* vigilance we're talking about, motor vigilance. I have chosen vigilance, as opposed to, say, arousal, activity, or wakefulness, to highlight its relationship, as yet poorly understood, to vigilance in the more common usage, collective vigilance, attunement to signs of incipient disruption (environmental, technological, political) in the fabric of social space.

Our rhythms of vigilance unfold over a range of temporal horizons. There are the muscular tonic patterns generated from within the body—breathing, walking—and the moment-to-moment motor resonance—you move, I move—of the morning train. There is the stimulation of social contact, work and play, caring for and hanging out, along with timed energetic events, meals and exercise—these play out over hours, though of course they form the basis for registers of recurring social–somatic presence, a regime of periodic heightened responsiveness to particular mixes of stimuli that

coalesce and dissolve over weeks, seasons, years, and generations. And there is the twenty-four-hour day, with its alternation of light and dark. These *zeitgeber*, timing cues, are social *and* material in character, all of them—sensory experience is itself shaped by socialization. I cannot bring myself to treat day/night as an inguinal crease separating the social from the merely sensory. (It is worth noting, though, that the transcription–translation feedback loops that govern circadian entrainment to light, both at the cellular level and, in vertebrates, via populations of dedicated pacemaker neurons in the central nervous system, are remarkably well conserved across the eukaryotes.<sup>2</sup>)

When I say a profound shift, what I have in mind is something more than a simple attenuation of the role of environmental *zeitgeber*, specifically the alternation of light and dark, in shaping our rhythms of activity and rest. What I have in mind is a change in the metrical architecture of human experience at every scale of its organization, from the 10 or 11 Hertz physiological tremor that governs motor readiness up to the seasonality of our moods and habits. The problem, for me, is to develop a synoptic picture of how the changes in these nested oscillations fit together.

It starts with the disappearance of biphasic sleep. As late as the second third of the nineteenth century, people in the North Atlantic world slept *biphassically*, retiring shortly after dark and rising after about four hours for a period of alertness and activity before returning to bed for a second sleep, waking at daybreak.<sup>3</sup> In some parts of the world this pattern was attested as late as the mid-twentieth century. As artificial illumination, the nocturnalization of work and social life, and, more recently, the extension of social coordination beyond local time have pushed bedtimes past nightfall, people's rhythms of alertness and quiescence have changed to accommodate their novel environment. The biphasic pattern described by Roger Ekirch "is exactly the same that was found to occur in modern individuals who rested and slept in long (14-h) artificial 'nights'" in laboratory studies.<sup>4</sup>

1 Mark S. Blumberg, "Sleep Physiology: Setting the Right Tone," *Current Biology*, vol. 23, no. 18 (2013), pp. R834–36.

2 Neil Dalchau and Alex A. R. Webb, "Ticking Over: Circadian Systems across the Kingdoms of Life," *Biochemist*, vol. 33, no. 1 (2011), pp. 12–15; Selma Masri and Paolo Sassone-Corsi, "The Circadian Clock: A Framework Linking Metabolism, Epigenetics and Neuronal Function," *Nature Reviews Neuroscience*, vol. 14, no. 1 (2013), pp. 69–75; see also Rachel S. Edgar et al., "Peroxiredoxins are Conserved Markers of Circadian Rhythms," *Nature*, vol. 485, no. 7399 (2012), pp. 459–64.

3 A. Roger Ekirch, *At Day's Close: Night in Times Past*. New York, NY: W. W. Norton & Company Inc., 2005.

4 Ekirch, *At Day's Close*; Thomas A. Wehr, "Photoperiodism in Humans and Other Primates: Evidence and Implications," *Journal of Biological Rhythms*, vol. 16, no. 4 (2001), pp. 348–64, here p. 358.

The laboratory studies alluded to by Thomas Wehr go back to 1901, when Sutherland Simpson and J. J. Galbraith,<sup>5</sup> physiologists at Edinburgh, noticed that the body temperature of the macaque monkeys in their lab varied depending on what time of day it was measured; they conceived an experiment to see how continuous light, continuous dark, and the inversion of light and dark from the natural day would affect the readings. Inversion studies in humans followed. In the 1930s, Chicago physiologist Nathaniel Kleitman<sup>6</sup> experimented with *forced desynchrony*, putting individuals on twenty-one- and twenty-eight-hour schedules to observe temperature rhythms free of the influence of the twenty-four-hour activity day. In June 1938, Kleitman had two men spend five weeks on twenty-eight-hour rhythms while living in specially constructed quarters in Mammoth Cave, Kentucky. Core temperature turns out to have a much narrower range of entrainability than activity and will continue in its endogenous cycle even as the activity day stretches.

In 1962, physicist Rütger Wever and physiologist Jürgen Aschoff established a zeitgeber-free living environment in a Second World War-era surgical bunker in Andechs, outside Munich, and embarked on a series of isolation experiments that would run until 1989.<sup>7</sup> About half these experiments were designed to elicit *freerunning* behavior; that is, participants were given no special light-dark protocol but were free to set their own rhythms of activity and rest. The French speleologist Michel Siffre preferred to carry out his free-running experiments, on himself and others, in caves, first in the southern Alps<sup>8</sup> and later, in 1972 and at the invitation of NASA, in Del Rio, Texas. The bunker-and-cave era of clinical chronobiology peaked in the 1970s, and by 1989, when NASA sponsored Stefania Follini, a twenty-seven-year-old woman from Ancona, to spend 130 days in a cave in Carlsbad, New Mexico, the N-of-1 freerunning paradigm carried a tinge of steampunk defiance. As if you needed to descend into a cave to pry yourself loose from the alternation of night and day.

### *Catching the beat*

In 2009, at thirty-four, I experienced a second episode of major depression. This time I was prepared. It was nowhere near as painful. It did not feel like my skin was on fire. I did not lose my hedonic drive. But when I recovered, something new happened: I become prone to manias. Two nights running of restricted sleep, or even just sleep shifted forward three hours, could set me off for a week or two. My whole personality took on a hypomanic cast, a mild fizziness, an undercurrent of euphoria and grandiosity that, for all its complications, beats depression with a stick.

Most astonishing of all, I became highly entrainable. Practically anything could provoke me to dance. Suddenly I wanted to listen to

electronic dance music. I spent a year with LCD Soundsystem's *This Is Happening* (2010) on repeat.

Not long after all this began, I started using a light box. It made the Berlin winter less oppressive. But it also helped with the summer, when, bathed in light, my gestures grow exaggerated, threatening to jump the groove. The light box gives off a glow the color of a midday sky. It is tuned to 480 nanometers, the peak sensitivity wavelength of melanopsin, the photopigment found in the intrinsically photosensitive retinal ganglion cells responsible for encoding light into a nervous signal to be transmitted from the eyes to the central circadian pacemaker, the suprachiasmatic nuclei of the hypothalamus.<sup>9</sup> It acts as a supplementary zeitgeber, correcting for deficits and surpluses of naturally occurring sunlight—not unlike the driving pulse in dance music, keeping you in sync with your social environment when all else is chaos and noise.

In 1982, researchers at the Oregon Health and Science University, Portland, and the US National Institute of Mental Health (NIMH) reported the case of a sixty-three-year-old man with rapid-cycling bipolarism who had noticed a distinct seasonal pattern to his mood cycles and whose winter depression responded to an improvised regime of bright fluorescent light, three hours in the morning and three in the evening for ten days.<sup>10</sup> Two years later the same network of researchers offered a preliminary description of seasonal affective disorder.<sup>11</sup> Earlier, psychiatrists at the University Neurological Clinic in Tübingen had demonstrated the effectiveness of sleep deprivation as a treatment for depression.<sup>12</sup> Light therapy and the rebranded wake therapy began to coalesce into

5 Sutherland Simpson and J. J. Galbraith, "Observations on the Normal Temperature of the Monkey and its Diurnal Variation, and on the Effect of Changes in the Daily Routine on this Variation," *Transactions of the Royal Society of Edinburgh*, vol. 45, no. 1 (1906), pp. 65–106.

6 Nathaniel Kleitman, *Sleep and Wakefulness*, revised edn. Chicago, IL: University of Chicago Press, 1963.

7 Rütger Wever, *The Circadian System of Man: Results of Experiments under Temporal Isolation*. Berlin: Springer, 1979.

8 Guy Chouvet et al., "Periodicité bicircadienne du cycle veille-sommeil dans des conditions hors du temps: étude polygraphique," *Electroencephalography and Clinical Neurophysiology*, vol. 37, no. 4 (1974), pp. 367–80.

9 Robert J. Lucas et al., "Measuring and Using Light in the Melanopsin Age," *Trends in Neuroscience*, vol. 37, no. 1 (2014), pp. 1–9.

10 Alfred J. Lewy et al., "Bright Artificial Light Treatment of a Manic-depressive Patient with a Seasonal Mood Cycle," *American Journal of Psychiatry*, vol. 139, no. 11 (1982), pp. 1496–98.

11 Norman E. Rosenthal et al., "Seasonal Affective Disorder: A Description of the Syndrome and Preliminary Findings with Light Therapy," *Archives of General Psychiatry*, vol. 41, no. 1 (1984), pp. 72–80.

12 Burkhard Pflug and Rainer Tötle, "Disturbance of the 24-hour Rhythm in Endogenous Depression and the Treatment of Endogenous Depression by Sleep Deprivation," *International Pharmacopsychiatry*, vol. 6, no. 3 (1971), pp. 187–96.



chronotherapeutics.<sup>13</sup> Acceptance has been slow, despite repeated confirmations of light therapy’s efficacy for nonseasonal as well as seasonal mood disorders.<sup>14</sup> Part of the problem is experimental design—how do you formulate a control for bright light? There is also the fact that, unlike drugs, you can’t patent light.<sup>15</sup>

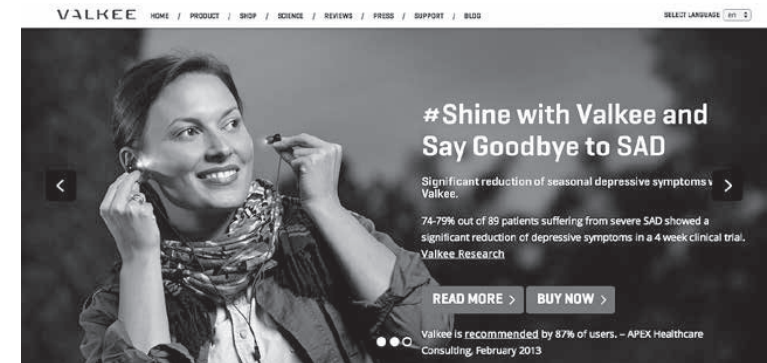
I began to read about entrainment, the coordination of activity through the active maintenance of a constant relationship of phase and period. As in dancing or making music or turn-taking in conversation, three distinctly human forms of behavior that exemplify our capacities—not unique, but uniquely elaborated—for empathy and shared attention.<sup>16</sup> You don’t need simulation or theory of mind to get cooperation between moving beings. You do need motor resonance, a predisposition to take other social presences for zeitgeber,<sup>17</sup> along with a sensitivity to rhythmic hierarchy.<sup>18</sup> You need a knack for coordinating pulsatile transient gain increases in your own sensitivity to movement in the environment with perceived attentiveness pulses in others. Rhythmic elevation in vigilance is the currency of kinesthetic empathy.

Despite a stray case report describing “marked sleep latency reduction and diminished vigilance”<sup>19</sup>—a tendency to nod off the minute they closed their eyes—mania was regarded as a product of too much vigilance. But sometime after 2000, researchers in Germany and the United States independently began to comment on overlaps in the phenomenology of disturbances of mood, attention, and arousal, and the implications of circadian entrainment in all of them.<sup>20</sup> Mania began to look more like an effort on the part of the individual to create a more stimulating environment in order to offset the risks posed by having *too little* vigilance.<sup>21</sup>

The impetus for this renewed attention to the regulation of arousal and rest was a dramatic increase in the diagnosis of mood, attention, and arousal disorders in young people. Attention deficit hyperactivity disorder (ADHD) is the best known facet of this story, but it is not the whole story. Between 1994 and 2003, annual outpatient diagnoses of bipolar phenomena in people under twenty in the United States grew *forty-fold*.<sup>22</sup> Among the causes was an unofficial relaxation of diagnostic criteria for episodicity in recurrent socially disruptive irritability in young people. Bipolar disorder had become a diagnostic receptacle for excess vigilance, prompting NIMH researchers to formulate a new nosology of nonepisodic severe irritability. Surplus arousal in young people was now “a pressing problem for clinical neuroscience.”<sup>23</sup>

## From chronotherapeutics to chronoactivism

“In many ways, light can be considered a drug, having the potential for both beneficial and deleterious effects.”<sup>24</sup>  
—Robert J. Lucas et al.



The Valkee: out of the clinic, into the Apple Store.

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- 13 Anna Wirz-Justice et al., *Chronotherapeutics for Affective Disorders: A Clinician's Manual for Light and Wake Therapy*, 2nd edn. Basel: S. Karger, 2013.
- 14 Robert N. Golden et al., “The Efficacy of Light Therapy in the Treatment of Mood Disorders: A Review and Meta-analysis of the Evidence,” *American Journal of Psychiatry*, vol. 162, no. 4 (2005), pp. 656–62; Arja Tuunainen et al., “Light Therapy for Non-seasonal Depression (Review),” *The Cochrane Library*, vol. 3 (2009).
- 15 Anna Wirz-Justice, “Chronotherapeutics (Light and Wake Therapy) in Affective Disorders,” *Psychological Medicine*, vol. 35, no. 7 (2005), pp. 939–44.
- 16 Jessica Phillips-Silver and Peter E. Keller, “Searching for Roots of Entrainment and Joint Action in Early Musical Interactions,” *Frontiers in Human Neuroscience*, vol. 6 (2012), p. 26.
- 17 Chris D. Frith and Uta Frith, “Mechanisms of Social Cognition,” *Annual Review of Psychology*, vol. 63 (2012), pp. 287–313.
- 18 W. Tecumseh Fitch, “Rhythmic Cognition in Humans and Animals: Distinguishing Meter and Pulse Perception,” *Frontiers in Systems Neuroscience*, vol. 7 (2013), p. 68.
- 19 B. Van Sweden, “Disturbed Vigilance in Mania,” *Biological Psychiatry*, vol. 21, no. 3 (1986), pp. 311–13.
- 20 Allison G. Harvey, “Sleep and Circadian Functioning: Critical Mechanisms in the Mood Disorders?,” *Annual Review of Clinical Psychology*, vol. 7 (2011), pp. 297–319; Sarah Heiler et al., “Severe Mood Dysregulation: In the ‘Light’ of Circadian Functioning,” *Medical Hypotheses*, vol. 77, no. 4 (2011), pp. 692–95.
- 21 Ulrich Hegerl et al., “Mania and Attention-deficit/Hyperactivity Disorder: Common Symptomatology, Common Pathophysiology and Common Treatment?,” *Current Opinion in Psychiatry*, vol. 23, no. 1 (2010), pp. 1–7.
- 22 Carmen Moreno et al., “National Trends in the Outpatient Diagnosis and Treatment of Bipolar Disorder in Youth,” *Archives of General Psychiatry*, vol. 64, no. 9 (2007), pp. 1032–39.
- 23 Ellen Leibenluft, “Severe Mood Dysregulation, Irritability, and the Diagnostic Boundaries of Bipolar Disorder in Youths,” *American Journal of Psychiatry*, vol. 168, no. 2 (2011), pp. 129–42, here p. 139.
- 24 Lucas et al., “Measuring and Using Light in the Melanopsin Age,” p. 6.

In 2012 I came across the Valkee, a light stimulation device that differs from my own beloved Philips goLITE and every other light device on the market in two ways: 1) it delivers light through the ears, not the eyes; and 2) it is very clearly designed to resemble an iPod.

Once you enter the world of consumer chronotherapeutics, it does not take long before you encounter accelerometer bracelets. Soon, with two device categories to work with, my thinking about entrainment had found a material scaffolding.

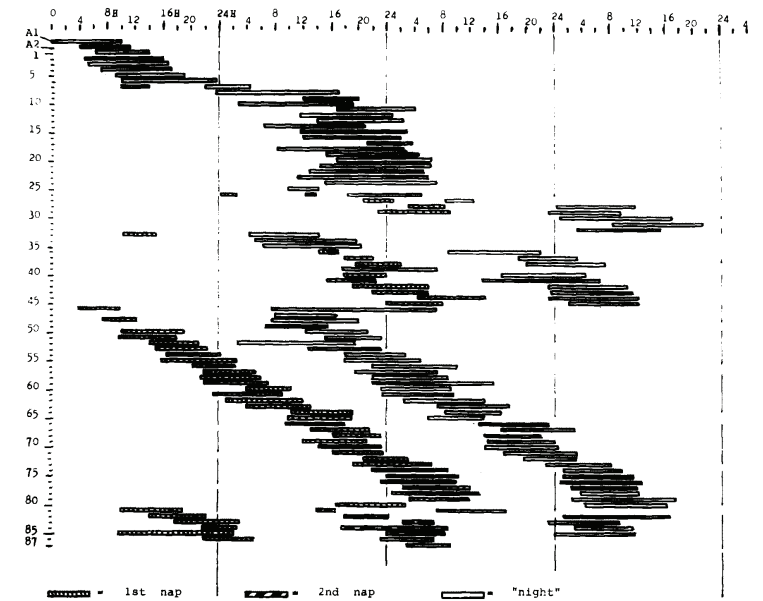
These days, accelerometer bracelets are the emblematic device in a rapidly expanding market dedicated to supporting personal management of rhythms of activity and rest. Vigilance is becoming a focal object of self-care. This, you will say, is not news. The vast majority of us have been self-administering a certain purine alkaloid known to enhance vigilance since the day we started making our own choices about what to eat and drink (and yet we know little about the developmental pharmacodynamics of caffeine<sup>25</sup>). Stimulant alkaloids have been with us since long before talk of social acceleration<sup>26</sup> and the nocturnalization of labor—in Mesoamerica for at least 3,000 years, on the Arabian peninsula and in adjoining parts of Africa for 1,000, in China for perhaps more than 2,500. Isn't activity monitoring just more of the same?

Yes and no. It is one thing to know that if you drink a cup of coffee you will, some twenty minutes later, experience the onset of a short-lived episode of elevated clarity, enhanced capacity for sustained attention, reduced hunger, reduced perceived effort in physical exertion, and so on. It is another to receive hourly updates on how active you have been over the preceding hour, where you stand in relation to your goals for activity, and how today compares with yesterday, last week, and the day your friends have been having.

It is another thing again to drink a cup of coffee and then go to sleep with the expectation of waking in exactly nineteen minutes when the caffeine kicks in—indeed, to organize your life around sleeping in nineteen-minute naps so that you may dispense with consolidated nighttime sleep altogether.<sup>27</sup> Polyphasic sleeping represents an extreme form of what we could call chronoactivism, but not that extreme. More and more people are devoting more and more energy to actively intervening in the architecture of their rhythms of sleep and wakefulness.

It has become easy to dismiss these things—modafinil, DIY transcranial direct current stimulation, polyphasic sleeping, non-therapeutic use of light stimulation, accelerometer bracelets, listening to dance music all day, practically any strategy of ergogenesis-as-personal-enhancement—as expressions of capitalism in its insatiable drive to produce.<sup>28</sup> There's something to this view.

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Sleep-activity cycles for twenty-three-year-old research participant "JPM" during 174 days living underground (June–November 1966)—note the radical change in JPM's activity pattern starting twenty-five days following his release from synchronization with surface time.

Refined sugar and tea were key ingredients in the making of the industrial working class.<sup>29</sup> But there's something deeper going on, the creation of a novel *somatic niche*, a new value schema for how we hold and move our bodies, one that, for all its continuity with the 500-year trajectory of capitalism, represents a divergence from the tempo of human motor readiness over a longer horizon.

Bracelet actigraphy participates in a history of physiological self-measurement that goes back at least to the 1860s.<sup>30</sup> It also participates in a more recent history of efforts to characterize the relationship between wakefulness and mood. The first use of a

25 Lisiane O. Porciúncula et al., "The Janus Face of Caffeine," *Neurochemistry International*, vol. 63, no. 6 (2013), pp. 594–609.  
 26 Hartmut Rosa and William E. Scheuerman (eds.), *High-speed Society: Social Acceleration, Power, and Modernity*. University Park, PA: Pennsylvania State University Press, 2008.  
 27 J. Berson and M. Puredoxyk, "The Age of Vigilance: A Conversation about Sleep." Under consideration for *n+1*, n.d.  
 28 Jonathan Crary, *24/7: Late Capitalism and the Ends of Sleep*. London: Verso, 2013.  
 29 Sidney W. Mintz, *Sweetness and Power: The Place of Sugar in Modern History*. Harmondsworth: Penguin Books, 1986.  
 30 William Ogle, "On the Diurnal Variations in the Temperature of the Human Body in Health," *St. George's Hospital Reports*, vol. 1 (1866), pp. 221–45.



device recognizably like those marketed today for sleep and fitness tracking was in the study of activity rhythms in individuals with rapid-cycling bipolar phenomena. NIMH researchers identified a forty-eight-hour rhythm of sleep-wake behavior, consistent with reports of recurring forty-eight-hour sleep-wake cycles in individuals who had spent more than thirty days in freerunning environments.<sup>31</sup>

These bicircadian rhythms tend to occur under conditions of internal desynchrony, when the body's core temperature and plasma cortisol rhythms get disentrained from the activity-rest rhythm, promoting an alternating short day-long day pattern that in some individuals can stretch to as long as forty-eight hours.<sup>32</sup> This kind of internal desynchrony is similar to what happens in jet lag.

### Delamination

We need a phenomenology of jet lag. Prolonged seated immobilization in a dim, noisy environment followed by a sudden resetting of the phase of environmental and social zeitgeber has a number of consequences, of which the decoupling of the body's rhythms of movement, core temperature, and corticosteroid expression—with all that that entails for metabolism and stress response<sup>33</sup>—is just the start. “Under jet lag,” writes travel essayist Pico Iyer, “something deeper is dissolved. I get off a plane, 17 hours out of joint, and tell naked secrets to a person I know I don't trust. A friend starts talking about her days—her plans, her friends, the things she wants to do—and tears start welling in my eyes.”<sup>34</sup> Jet lag is not unlike depression. You must fight the tendency toward social withdrawal, toward sleeping at inappropriate hours, toward inanition.

More and more, the architect Keller Easterling has proposed,<sup>35</sup> we move in an environment of *spatial products*, extents of built space whose architectonic and social features are conditioned not by geographic context but by the interests manifest in spatially dispersed organs of capital accumulation. These are spaces shaped not by proximity but by nonlocal simultaneity.

Something similar is true of our bodies. Zeitgeber stream to us from well beyond perisomatic space, and we in turn project our social presences, plural, out into the new space of nonlocal simultaneity. Built space, of course, has always shaped how we hold and move our bodies, and habitual movement marks us in enduring ways. Some of these marks are anatomically salient: the length of limbs, the curvature of the spine, the wearing away of connective tissue. But habitual movement also shapes body schema, the constellation of prereflective expectancies about the proprioceptive, vestibular, and visual consequences of moving in particular ways by which we monitor the interface between self and world.<sup>36</sup> When we extend our bodies in space we extend our awareness too, as when a tool comes

to feel like an extension of your hand. When we become more or less continuously present at a distance—when the rays, the beams, the signal-bearing waves, are no longer confabulations, when people on the other side of the world really are constantly talking about you, to you—something new happens. The *thereness*, the manifest quality of other presences (people, but not just people), impinges on us in a way that is more urgent, even (especially?) when those presences are low-fidelity—and at the same time less specific in its sensuous qualities. We start to attend less to what is going on in the field of experience defined by the space around our bodies and more to what is unfolding in the larger space of distant presence. We start to experience the spontaneous coordination, transient phase-locking, and cascading of behavior among large numbers of individuals over great distances—human movement starts to exhibit criticality.<sup>37</sup>

There is something more: just as in jet lag our endogenous oscillators become delaminated from one another, in synchronization-at-a-distance social personae become delaminated from bodily presence—from bodily *desire*, from the very specific limbic sensations afforded by movement, rest, eye contact, skin-to-skin touch, breathing in time with someone else. Whatever else synchronization-over-distance is, it is a condition of *asymbolia*,<sup>38</sup> a damping down of the emotional resonance of sensory experience—or, in a more positive light, of *pratyahara*, the withdrawal from the moment-to-moment flux of sensory experience that is a prerequisite of the boundarylessness we associate with flow-states.

31 Thomas A. Wehr et al., “48-hour Sleep-Wake Cycles in Manic-depressive Illness: Naturalistic Observations and Sleep Deprivation Experiments,” *Archives of General Psychiatry*, vol. 39, no. 5 (1982), pp. 559–65.

32 Chouvet et al., “Periodicité bicircadienne du cycle veille-sommeil”; Charles A. Czeisler et al., “Human Sleep: Its Duration and Organization Depend on its Circadian Phase,” *Science*, vol. 210, no. 4475 (1980), pp. 1264–67.

33 Frank Scheer et al., “Adverse Metabolic and Cardiovascular Consequences of Circadian Misalignment,” *Proceedings of the National Academy of Sciences of the USA*, vol. 106, no. 11 (2009), pp. 4453–58.

34 Pico Iyer, “In the Realm of Jet Lag,” *The New York Times* (March 7, 2004), nytimes.com/2004/03/07/magazine/in-the-realm-of-jet-lag.html (reprinted as “Nightwalking,” in *Sun after Dark: Flights into the Foreign*. New York, NY: Alfred A. Knopf, 2004).

35 Keller Easterling, *Enduring Innocence: Global Architecture and its Political Masquerades*. Cambridge, MA: The MIT Press, 2005.

36 Olaf Blanke and Thomas Metzinger, “Full-body Illusions and Minimal Phenomenal Selfhood,” *Trends in Cognitive Sciences*, vol. 13, no. 1 (2009), pp. 7–13.

37 J. A. Scott Kelso, “Metastable Mind,” in Deborah Hauptmann and Warren Neidich (eds.), *Cognitive Architecture: From Biopolitics to Noopolitics. Architecture and Mind in the Age of Communication and Information*. Rotterdam: 010 Publishers, 2010, pp. 116–38; Catherine Malabou, *Que faire de notre cerveau?*. Paris: Fayard, 2004.

38 Nikola Grahek, *Feeling Pain and Being in Pain*, 2nd edn. Cambridge, MA: The MIT Press, 2011; Mauricio Sierra, *Depersonalization: A New Look at a Neglected Syndrome*. Cambridge: Cambridge University Press, 2009.

One person's desynchrony is another's polyrhythmicity.

You are waiting for me to say something like *vigilance becomes a scarce resource*. But actually I think it's the other way around. Vigilance is something we create on demand, just as banks create money.<sup>39</sup>

How we distribute it is another matter.

My humble thanks to Marie Staver, Katja Heuer, Elaine Kuffel, and Jessy Tuddenham.

39 Michael McLeary et al., "Money Creation in the Modern Economy," *Quarterly Bulletin of the Bank of England*, Q1 (2014), [bankofengland.co.uk/publications/Documents/quarterlybulletin/2014/qb14q1prereleasemoneycreation.pdf](http://bankofengland.co.uk/publications/Documents/quarterlybulletin/2014/qb14q1prereleasemoneycreation.pdf).

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Abu Ali al-Hasan ibn al-Haytham  
The Optics (1011–21)

*The Optics of Ibn Al-Haytham, Books I-III: On Direct Vision*, tr. A. I. Sabra. London: The Warburg Institute, University of London, 1989, pp. 114–20 (excerpt)

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Natascha Sadr Haghghian  
Parallax

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The eleventh-century treatise on optics by the Baghdadi polymath al-Haytham is an extensive study on how light, vision, and the eye work together. Paramount to al-Haytham's project was a desire to expand upon Aristotle's phenomenological theory of vision, and consequently, to provide a grounded mathematical basis for these interactions, thus transforming a metaphysics of visuality into a physics of the visible. Once translated into Latin, *The Optics* arrived at Italy in the thirteenth century, bearing significant influence on later artists and architects, such as Lorenzo Ghiberti, Fillipo Brunelleschi, and Leon Batista Alberti, all of whom were the founding fathers of the theory of perspective. The articulation and application of perspectival theory in Renaissance painting would have profound implications for the course of Western thought and, in particular, introduce a secularizing, humanizing, centralizing approach to scientific knowledge. Perspective, deployed as part of a strong belief in an ability to represent the world, offered practitioners full capacity to depict "reality" as it truly is. This "objectivity" would use reason and measurement to conquer, categorize, manage, and, in effect, fully understand the world, with humans occupying the central view. Natascha Sadr Haghghian's practice tackles these regimes of perspective and the distribution of "schools of seeing." Her essay departs from