

Turning On: Technological Circuits in USCO and Zero

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In April of 1967, *Light/Motion/Space* opened at the Walker Art Center. The curator, Willoughby Sharp, argued that “the art of light and movement... is a wholly new esthetic instrument already engaged in the process of transforming our space-time awareness.”¹ Light art was having a heyday; *Time* magazine suggested that “From coast to coast, no... exhibit of contemporary art these days is complete without the zap of neon, the wink of a wiggle bulb, the spiral shadow of a lumia or the ghostly glare of minimal fluorescence.”² The author went on to call this “the technological supercharge,” suggesting that light was not merely light but was... something else. Michael Kirkhorn, writing for the *Milwaukee Journal*, went further, seeming to detail what this something else was: “Now, real social and economic power belongs to engineers with circuit diagrams. Art should also concern itself with minute exchanges of energy and information.”³

In his catalogue essay, Willoughby Sharp goes in another direction: he suggests that this interrogation of technology is in fact about new forms of sociality and collectivity—and that this is most apparent in a category he calls the “spectacle.”⁴ In the press coverage of the show, a great deal of attention was paid to two environmental spectacles: Otto Piene’s *Proliferation of the Sun* (1967) and the USCO collective’s *Strobe Room* (1967).⁵ This paper will explore how Piene and USCO within

these two installations used light, space, and time to effect perceptual transformation, but proposed radically distinct models of egoic dissolution and reintegration.

The final section of Sharp’s essay focused on these spectacles, stating that “we are in the process of moving away from the physical view of reality as that which exists to a kinetic view of reality as that which seems to happen. This is a shift from being to becoming. ... Kinetic works do not contain time, they create time. Kinetic works do not exist in space, they create space.”⁶ He goes on to claim that “A spectacle makes the spectator abandon the closed, definite static state of older attitudes. It reinvigorates the spectator because he has a role to play in the event. A spectacle demands total audience involvement.”⁷ And further below in the text: “Deeper immersion. A new generation of artists has sensed that the vanishing point has vanished. They strive toward total integration—the self merged with the One.”⁸

Technology, then, is placed in the service of mediating between the inside and the outside, and collapsing the distinction between subject and environment. Significantly, though, Sharp thought that artists’ collectives were, by the communal nature of their activities, further along in their abilities to shape works that simultaneously create time and space through spectacle. What we see in *Proliferation of the Sun* and *Strobe Room* is

- 1 Willoughby Sharp, “Luminism: Notes Toward an Understanding of Light Art,” in *Light/Motion/Space*, exh. cat. Walker Art Center (Minneapolis: Walker Art Center, 1967), 10.
- 2 Piri Halasz, “Techniques: Luminal Music,” *Time*, April 28, 1967, 78.
- 3 Michael Kirkhorn, “Light/Motion/Space/Light/Motion/Space,” *Milwaukee Journal*, July 16, 1967, 4.
- 4 Sharp, “Luminism: Notes,” 9.
- 5 In the exhibition catalogue, the work by USCO was called *Strobe Environment*; see *Light/Motion/Space*, 36.
- 6 Sharp, “Luminism: Notes,” 9.
- 7 Ibid.
- 8 Ibid.

not the cybernetic feedback loop that we might expect to see referenced at this point in time, but it is instead something more immersive, something arguably transformative.

Piène was one of the initiators of ZERO, an international art movement that formed in Düsseldorf, Germany, toward the end of the 1950s around the core composed of Heinz Mack, Otto Piène, and Günther Uecker. They organized exhibitions and “demonstrations” and published three issues of a magazine, *ZERO*, which collected contributions from a much broader network of like-minded artists. They were widely showcased in the media of the time. Caroline Jones notes in her review of the retrospective at the Guggenheim that Zero offered a “telegenic circuit—confirming that before ZERO could be understood as art, it was a media event.”⁹ While the core members of ZERO presented their work in a number of exhibitions as Group Zero (Mack, Piène, Uecker),¹⁰ they also displayed individually signed work.

USCO, or the Company of US, was an artists’ collective from the United States that included poets, filmmakers, artists, and engineers that lived and worked communally, using light and sound, computer technologies and techniques of meditation, words, images, and bodies. The group initially developed from a collaboration that took place in San Francisco between Gerd Stern, a San Francisco Beat poet, and Michael Callahan, an engineer. It grew to include printmakers Judi Stern and Barbara Durkee, and Steve Durkee, a New York painter. USCO were interested in systems and the impact of new media technologies, and they were invested in theories of communication, from cybernetics to Marshall McLuhan.

The two groups had already overlapped in the shows *KunstLichtKunst* in Eindhoven, The Netherlands, and *Light in Orbit* in New York.¹¹ Sharp foregrounded their nature as collectives. The com-

parison between them brings out a set of radically different concerns: Zero turned toward the time of weather and questions of solar time; USCO interrogated the time of onrushing information in the era of the computational.

Piène’s *Proliferation of the Sun* was initially performed in March of 1967 at the opening of Piène and Aldo Tambolini’s Black Gate Theatre in New York, a small Off-Broadway theater. That performance had four slide projectors, operated by Hans and Linda Haacke, Peter Campus, and Paolo Icaro.¹² Piène narrated the scripted performance, which he began by telling the projectionists to “turn your projectors on now.” Piène gave various commands, instructing participants to change projector speeds from fast to slow, to move from a madness of color to a pure white light.

Proliferation of the Sun had a number of antecedents in Piène’s work. There were ballets staged in his studio, where visitors could turn on the light machines, as well as fully automated mechanical Light Ballets. There was an even earlier work staged at Galerie Schmela in 1959 as “an archaic light ballet” that used torches and perforated cardboard.¹³ The staging at the Walker took these ideas to a larger scale, and incorporated a number of different forms of “light”—or, we could say, technology. At *Light/Motion/Space*, *Proliferation of the Sun* was only installed for the four-hour opening of the exhibition. It had been reimaged for this space, as two sketches from the collections of the Harvard Art Museums/Busch-Reisinger Museum show. The schematic calls it a “perpetual environmental performance” (fig. 1). It calls for darkness, and for a translucent wall of red muslin and at least four ceiling-height panels to be installed. Five theatrical projectors, in red, white, and blue, were to be aimed at and around the audience. Another was to be aimed at double mirrors mounted overhead on the ceiling. Two more, one

9 Caroline A. Jones, “Zero: Countdown to Tomorrow, 1950s–60s,” *Artforum* 53, no. 7 (2015): 274–75.

10 See, for example, the exhibition *Group Zero: Mack, Piène, Uecker* at the McRoberts & Tunnard Gallery in London, 1964.

11 *Kunst Licht Kunst*, Van Abbemuseum Eindhoven, September 25–December 4, 1966. *Light in Orbit*, Howard Wise Gallery, New York, February 4–March 4, 1967.

12 Otto Piène, “The Sun – the Sun – the Sun,” *Leonardo* 29, no. 1 (1996): 68.

13 Otto Piène, “Light Ballet,” in *Piène: Light Ballet*, exh. cat. Howard Wise Gallery (New York: Howard Wise Gallery, 1965), n.p.

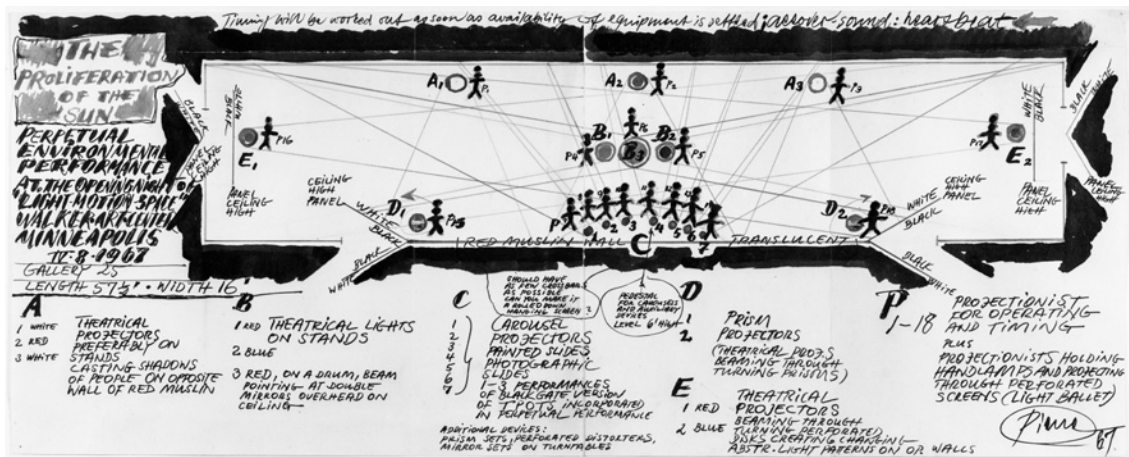


fig.1 Otto Piene, sketch for the 1967 performance at the Walker Art Center entitled *The Proliferation of the Sun*, 1967 Harvard Art Museums / Busch-Reisinger Museum, Gift of Mr. and Mrs. Jan van der Marck, inv.-no. 1985.31



fig.2 USCO, *Contact is the Only Love*, 1963/2000
 Photo Thomas Julier / Courtesy Fri Art Kunsthalle

red, one blue, were to be shone through “turning perforated disks, creating changing abstract light patterns on opposite walls.” The heart of the piece, though, belonged to a small section of the schematic that calls for over a thousand hand-painted slides, mounted on seven carousel slide projectors, many equipped with additional devices—“prism sets, perforated distorters, mirror sets.” Otto Piene would direct the spectacle, with seventeen student helpers from a nearby art school. One of the diagrams calls for “allover sound: heartbeat,” suggesting that the installation is an exercise in staging a new, provisional collective body.

This is a lot of light—or a lot of technology—staged in a relatively small space. There is no proscenium stage, set aside, for the spectators to watch. They are inside the spectacle, immersed.

86 There are lights directed at the spectators, blindingly bright, lights cast upward on mirrors, lights directed through prisms. There are perforated screens to shine the light through. There are mirrors set to reflect and refract; prisms to shape new wave forms. There are screens and red muslin. The forms on the slides are abstract, largely circular, with varying patterns, brilliant color, and texture. The colors are more and less translucent. They invoke clouds, planets, and the titular sun—but also amoebas and tiny cells. The screens overlap and dissolve. Seventeen students are crowded into this space, hard at work following Piene’s directions. The slide projectors aren’t quiet. They run hot. There is a rock band to contend with. The audience becomes part of the environment; casting shadows, serving as screens for lights, direct and reflected, colored and abstract and pure white. And the constant drone of “the sun, the sun, the sun.” This drone is a mantra, a somatic technology intended to alter a state of being. The result is nothing so much as a new ritual, a call

to a dissolution of boundaries and borders and a fall into a nonhuman temporality of planetary consciousness; Piene called the work “a journey through space.”¹⁴

In her writing on the *Zero Fest*, Christine Mehring suggests that Piene, Mack, and Uecker engage in a “simultaneous pursuit of materiality and immateriality—by concretizing space and light, or by using new technologies and industrial materials to suggest a vague sense of transcendence and idealism.”¹⁵

Piene recalls being spellbound by the technologies he saw as a gunner during World War II, calling their explosions and detonations “hectically beautiful.” He suggested that these vivid patterns were a “naïve light ballet,” and that up until then “we have left it to war to light up the sky with colored signs and artificial and induced conflagrations.”¹⁶ He wants to reimagine this technology to offer something real: “a view of something giving, flowing, pulsating. Not the shrinking of the world in the cells of human imagination, but expansion on very side.”¹⁷

He suggests that artists must create new kinds of art with these new technologies. He imagines a future where people in cities look up to floating, breathing sculptures, or creations “with singing fins... they might be the skin of the city or clouds in miraculous colors. Or none of that. Only one light beam. On its way to the moon it passes a rainbow. Artists will perhaps have more influence—to equip and develop, to widen and intensify the senses, the power stations of general human intelligence.”¹⁸

This is wildly romantic and idealistic—arc-ing from materiality to immateriality to the moon. It imagines not a specific audience, but a collective transformation of the social world through the targeted use of particular technologies. He imagines “a directed light display... the dimensions

14 Piene, “The Sun – the Sun – the Sun.”

15 Christine Mehring, “Television Art’s Abstract Starts: Europe circa 1944–1969,” *October*, no. 125 (Summer 2008): 55.

16 Otto Piene, “Paths to Paradise” (1961), in *Theories and Documents of Contemporary Art: A Sourcebook of Artists’ Writings*, ed. Kristine Stiles and Peter Selz (Berkeley: University of California Press, 1996), 408–10.

17 Ibid.

18 Otto Piene, “The Proliferation of the Sun,” *Arts Magazine* 41, no. 8 (Summer 1967): 31.

of the Northern Lights ... or controlled mirages and controlled atomic explosions."¹⁹ Natural effects—the residue of complex processes and weather—are ambiguously overlaid and counter-balanced with a newly intentional underlay. To crib from the *Whole Earth Catalog*, a later meditation on what technology might do to us: We are as gods; we had best get used to it. We will make you some beautiful weather; we will transform and remake the skies; we will create new suns.

USCO is, in some ways, a little more straightforward about their preoccupations: they are concerned with electronic communications technology, and its effects on the subject. USCO both models and gestures toward new social organizations, stating in the catalogue for *KunstLichtKunst* that "we are all one, beating the tribal drum of our new electronic environment."²⁰

USCO presented two works at the Walker show: *Seven Diffraction Hex* and *Strobe Room*. Unusually for USCO, both were abstract rather than representational. They generally used both words and images in elaborate slideshow spectacles. However, *Seven Diffraction Hex* was a reflective octagonal shape that would later be described by *Time* magazine as "Headache inducing. ... Brilliant stroboscopic light imprints patterns of whirling hexagons as a sequence of images upon the eye's retina." Walter Barker of the *St. Louis Post-Dispatch* describes it as a "light machine," "a stand-up-to, do-it-yourself psychedelic device. ... Before an elaborate switchboard, seven rapidly spinning hexagonal plates constructed of tiny metal light-refraction discs take up the beat of a relentless strobe light. Ticking off the beat of the strobe light, a concealed mechanism builds climax upon climax of multiple sense experiences."²¹

Seven Diffraction Hex borrowed its form and, I would argue, its intent from an earlier piece

called *Contact is the Only Love*, an eight-foot-tall octagonal machine—a work shown, incidentally, in the *KunstLichtKunst* show (fig. 2).

Contact is the Only Love rotated as well. Shaped like a stop sign, it flashed not pulses of light, but contradictory messages in the capital letters of authority: GO, YIELD, ENTER WITH CAUTION, DO NOT CROSS LINE, MERGE. It was bordered with lights that operated with "a basic flashing rhythm of 480 flashes per minute,"²² and accompanied by a soundtrack of highway noise and pop music. As Stern pointed out, "All of these are go commands."²³ Language of command, order and control, of highway constraints and traffic regulation, all intended to make man and machine play well together on the streets and highways. Language that would be followed so readily that its appearance would almost disappear in the urban landscape. Turn Left, Turn Right, Stop, Yield, No Stopping—commanding words and phrases that habituated drivers to obey without ever really registering.

Stern stated that these sculptures were attempts to "investigate the new power and effect of 'Word' as visual object. ... The word on highways and billboards bigger than life is a recent phenomena ... and the total effect is something else than the written word."²⁴ Writing in *Artforum*, Phillip Leider begins by comparing this work to earlier kinetic work by Charles Mattox that "remained well within a tradition of constructivist art, distilling a positive, cheerful esthetic from a technology that no one really feels very positive about." Where Mattox operated from "an abstracted idea of the beauty of technology," Leider argues Stern comes from another direction:

The senselessly blinking light is a manifestation of the Absurd. ... the sharp edge of Stern's wit is derived from the absurdity of technology as applied. The flashing,

19 Ibid., 25.

20 USCO, in *Kunst Licht Kunst*, exh. cat. Van Abbemuseum (Eindhoven: Van Abbemuseum, 1966).

21 Walter Barker, "New Light on the Art Scene," *St. Louis Post-Dispatch*, March 26, 1967, 43.

22 Gerd Stern, interview with the author, Summer 2015.

23 Ibid.

24 "The Go-Go-Go Art," *San Francisco Examiner*, November 5, 1963, 3.

hypnotic traffic signal with its insane imperatives (Stop! Go! Shoot Yourself!) provokes in him a madman's laughter, but it also provokes a poet's concern over the curious things that happen to words when they become the ammunition of the Ray Guns of the State and of the great commercial institutions. The size of a word on a printed page, for example, is one thing, but a single word on a billboard in letters eight feet tall, with, perhaps, each letter blinking in a different color for emphasis is something else. Stern ... thinks that such manifestations have created a link between poetry and the visual arts ... [he] has ... several decades of conditioning by Madison Avenue and super-highway prosody, and he exploits it well.²⁵

88 Stern's work was flashy, loud, and elaborate—and a template for the works that would define USCO—while in the vocabulary of kinetic sculpture it was also an initial salvo into an intersection of art, technology, and control, routed through language and its instructions. The emphasis throughout is on the contortions necessitated by technology—both technical and social—its structure of command, and the obeisance it demands. Stern and USCO were heavily influenced by Marshall McLuhan's *Understanding Media*. A quick rehearsal: McLuhan saw media as "extensions of man," transforming bodily senses. He understood electronic media as a new stage in the development of media, serving as an externalization of the central nervous system. To quote USCO quoting McLuhan, this age is one "whose media substitute all-at-onceness for one-thing-at-a-timeness. The movement of information at approximately the speed of light has become by far the largest industry in the world," and hence, "patterns of human association based on slower

media have become overnight not only irrelevant and obsolete, but a threat to continued existence and sanity."²⁶

McLuhan tells his readers they must transform or go mad—in short, they must accommodate themselves to new media forms. Elsewhere, McLuhan states that transformation at the hands of technology is inevitable. Senses are extended, perception is displaced, and we serve our technologies, even as we create them. McLuhan then offers a program for artistic practice: it is, and ought to be, "exact information of how to rearrange one's psyche in order to anticipate the next blow from our own extended faculties. ... in experimental art, men are given the exact specifications of coming violence to their own psyches from their own counter-irritants or technology."²⁷ What is unexpected here is the language of information, and the violent bureaucratic efficacy of technology: the very use of technology "conforms men."²⁸

McLuhan goes on to state that "those parts of ourselves that we thrust out in the form of new invention are attempts to counter or neutralize collective pressures and irritations. But the counter-irritant usually proves a greater plague than the initial irritant, like a drug habit. And it is here that the artist can show us how to 'ride with the punch.'"²⁹ Artists were to take on a new role: they were to anticipate, and instigate transformation. The arts were a hedge. McLuhan warned that without defenses, electronic media could cause the surrender of "our senses and nervous systems to the private manipulation of those who would try to benefit from taking a lease on our eyes and ears and nerves,"³⁰ without anyone ever really noticing. USCO claimed they were interested in "proving out" his theories; their *Strobe Room* was staged as an interrogation into the controlling effects of technology. Donald Key described it in the *Milwaukee*

25 Philip Leider, "Gerd Stern, San Francisco Museum of Art," *Artforum* 2, no. 6 (1963), 46–48.

26 Marshall McLuhan, "Is It Natural That One Medium Should Appropriate and Exploit Another?" (1967), in *Essential McLuhan*, ed. Eric McLuhan and Frank Zingrone (New York: Routledge, 1997), 180.

27 Marshall McLuhan, *Understanding Media: The Extensions of Man* (Cambridge, MA: MIT Press, 1994), 66.

28 *Ibid.*, 45.

29 *Ibid.*, 66.

30 *Ibid.*, 68.

Journal: "It literally carries viewers into a dreamlike experience that is creepy, crazy, dizzy or delightful, depending on one's reflexes and stomach. The dark room consists of walls of reflecting plastic (mylar) with a flashing strobe light at the top. When it starts to work the usual reaction is a feeling of weightlessness and an impression that everyone is moving in slow motion. It is an environmental sculpture in the most absolute form."³¹

The setup is simple, the effect is vertiginous. Images reflect in the mylar surround of the space in a kaleidoscopic whirl of light and color. They spin and refract, creating an experience of spatial disorientation. This altered perception is intended to correspond to an altered consciousness. In this, we see an elaborate interest in breaking the frame. There is a movement between projection and mirrors, creating an environment in which the viewer is always already inside the picture—immersed and drowning in a cacophony of image. Here, the self is always on display—there is no point, in a room of mirrors, in which you can stand that you are not part of the picture. Yet this vision of the self is marked not by the egoic differentiation of the mirror stage, with the skin neatly sealing the self, but by a troubling fusion of the individual into the environment. Strobe lights were certainly one of the more dramatic effects mobilized by the intermedia shows—operating at the heart of USCO's performances and installations, and later showing up at Andy Warhol's *Exploding Plastic Inevitable* (EPI), before rapidly crossing over into more mainstream nightclubs and discotheques. Stroboscopic lighting was an industrial technology created in 1931 for high-speed photography, and was developed within industry for the careful study of rapidly moving machinic parts. The short, high-intensity bursts of light given off by strobes could be synchronized precisely with movement, to make an object appear to stand still in time. It extravagantly disrupted the ordinary experience of light and darkness, punctuating it with an involuntary machinic blink.

There was no arrest; the light bled through closed eyelids. It was a strange dazzlement of overexposure, amplifying and obscuring in turn, revealing and then eclipsing space and spatial relations. The staccato brilliance fractioned time and patterned the retina with afterimages.

In an interview, Steve Durkee, one of USCO's founding members, tells Jonas Mekas that "strobe is the digital trip. In other words, what the strobe is basically doing, it's turning on and off, completely on and off" in a way that the incandescent bulb can't. Mekas and Durkee both agree that, on some level, the strobes represent death, "since there is nothing but the white light in it, it represents... the point of death or nothingness." Mekas goes on to say that with the flashing of the strobes, "you lose the sense of sound":

SD: Or who you are—because all you see are fragments of yourself. ...

JM: ... We are cut by strobe light into single frames ...

[...]

JM: ... What's the meaning of our becoming single frames?

[...]

JM: ... Dissolving all the points of hard resistance, both of matter and mind? So that every reality that is here like a rock is being atomized?... with strobes we cut ourselves into single frames. ... the intermedia shows, the strobe opens us. Now we are beginning to see ourselves in a different perspective, or in no perspective at all, perhaps, but in the simultaneity of distances—like looking at ourselves from outside and inside at the same time, out of our own body...³²

The inevitability here is telling: the strobe just does something. It is not that it is *used* to open us, or that it *might* open us. It opens. And, indeed, this is a rhetoric familiar from Gene Youngblood's discussion of the expanded cinema.³³ This aligns a little too closely for comfort with the

31 Donald Key, "Dazzling Light/Motion Show," *Milwaukee Journal*, June 25, 1967, 6.

32 Jonas Mekas, "June 16, 1966: More on Strobe Light and Intermedia," in *Movie Journal: The Rise of the New American Cinema 1959–1971* (New York: Collier Books, 1972), 244–46.

33 Gene Youngblood, *Expanded Cinema* (New York: E.P. Dutton, 1970).

rhetoric of control that surrounds psychedelic drugs, and can be queried, perhaps, in a similar fashion. Theodore Roszak puts it concisely: “The ‘psychedelic revolution’ then, comes down to the simple syllogism: change the prevailing mode of consciousness and you change the world; the use of dope *ex opere operato* changes the prevailing mode of consciousness; therefore, universalize the use of dope and you change the world.”³⁴ A syllogism terrifying in both its simplicity, and illogic—but nevertheless, one that articulates a then prevalent point of view. Similarly, the strobe—and intermedia, more generally—are seen to have an immediate and involuntary effect. This effect is the generative point of their possibilities, for expanded consciousness, and a reordering of the senses. And, of course, the possibilities for reordering the senses through technological control did not belong singularly to the counterculture. *Proliferation of the Sun* and *Strobe Room* use light, mirrors, and environmental spectacle; both were discussed in terms familiar from Op Art:

dizzying, nauseous, overwhelming, astonishing. Alchemical. Gimmick and magic. But they are not simply objects in a white room. Not paintings on a wall. These are surrounding environments, where the viewer, like it or not, is bombarded by the work, potentially drowning in it. You don’t pay attention to these works the way you do to a painting or a sculpture; it processes you.

Proliferation of the Sun looks backward, to searchlights and WWII bombing runs, and forward simultaneously, imagining a *longue durée*. It gestures to a timescale beyond the human, and perhaps recuperates that Bauhaus idea that technology looks to nature in its efforts to reshape the world. USCO’s *Strobe Room* does not look to nature, but rather it implicates its viewers quite directly, even forcefully, in a new nature remade by information technology and the digital logic of the computational. It suggests, perhaps, that if we are already being programmed, we might need to look directly at the source code.

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34 Theodore Roszak, *The Making of a Counter Culture: Reflections on the Technocratic Society and Its Youthful Opposition* (Garden City, NY: Anchor Books, 1969), 168.

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