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What the Dormouse Said: How the Sixties Counterculture Shaped the Personal Computer Industry

John Markoff (New York: Penguin, 2005)

Vaughan Black†

John Markoff has hit upon an unbeatably apt title for a book that explores and expounds the connections between the laying of the groundwork for personal computing in California in the 1960s and the culture of psychedelic drugs, social experimentation, and political protest that provided the backdrop to that development. The *Dormouse* nicely links those two worlds. In evoking the author of *Alice in Wonderland*, it calls to mind someone who was not merely an accomplished mathematician, but who made innovations in the information technology of his day. Charles Dodgson communicated with the ageing Charles Babbage to offer suggestions for improvements to his Analytical Machine, he employed and improved the electric pen, and he invented the nycograph to enable him to take notes in the dark.¹ And, of course, Alice's Dormouse was adopted by Grace Slick when she composed the Great Society/Jefferson Airplane acid-rock song "White Rabbit".² "Feed your head, feed your head" were the words the Dormouse stentoriously proclaimed, at least on the *Surrealistic Pillow* version of the song.³

*What the Dormouse Said*⁴ is the revisionary backstory of Silicon Valley; in particular, the roots of the current model of human interface with personal computers (video screen, keyboard, mouse) and the early stabs at creating the Internet. Markoff is a long-standing hi-tech reporter for the *New York Times* who, over the past 20 years, has co-written three computer-related books.⁵ In *Dormouse*, his fourth book (but first solo effort), he takes us back to the pre-ironic age — "the Flintstones era of computers"⁶ — when batch processing and beatniks still roamed the earth. His claim is that the various accounts of the birth of personal computing have failed to attend sufficiently to the significance of the unique social milieu of San Francisco-area culture of the

1960s. There is much debate, not to mention much confused popular memory, over what the essence of the 1960s was, but in Markoff's view, it was characterized by a bohemian sensibility that was open to experiments in alternative living arrangements, a disposition to anti-establishment politics (especially opposition to the military-industrial complex and its war in Vietnam), and a willingness to experiment with altered psychic states, especially through ingesting and inhaling certain substances. More fundamentally, in Markoff's slightly elegiac account of the period, what was shared by the hippies and the personal computing pioneers based in and around Stanford was a commitment to transforming the world and the nature of humanity in a fundamental way — bringing about a change that hadn't come before.

Markoff's claim appears to be that these phenomena — the counterculture and the birth of the personal computer — did more than simply share physical propinquity and some notable aesthetic parallels. As he documents in *Dormouse*, many of the people who were at the forefront of changes in personal computing were not simply living and working in proximity to the counterculture. Rather, they were, at least in some cases, participants in it. *Dormouse's* account of the contacts between LSD and Stanford-based computer scientists does not begin with the widespread and much-publicized recreational use of that chemical in the late 1960s, but rather with the more systematic and controlled experimentation of the late 1950s and early 1960s, before acid was criminalized. For instance, he describes group LSD sessions by computer scientists at the Stanford Research Institute, where the participants dropped acid in an effort to see whether they might be able to invent something new while under its influence.⁷ Participants included Doug Englebart, who would go on to invent the mouse, though the device Englebart con-

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ceived while on an acid trip, the tinkle toy, was considerably less influential.⁸

Throughout *Dormouse*, the exploratory ferment in and around Palo Alto is contrasted with the buttoned-down, conformist hierarchy of back east, exemplified by MIT, IBM, and Digital Equipment Corporation. It also contrasted with the conservatism of Xerox, which had a west-coast outpost in Palo Alto but was dominated by a thoroughly east coast corporate culture. Xerox, in particular, is offered as a cautionary tale — the company that might now be the largest and most successful corporation in the world today had its executive drones not fumbled the personal computer ball due to lack of imagination about the technological potential they held in their hands. *Dormouse* seems to suggest that if the folks at Big Blue and Xerox had simply spent more time toking up and grooving to the Grateful Dead, then those organizations might have led the way in personal computing and companies such as Apple, and, in a different vein, Microsoft, would never have seen the light of day.

Dormouse's argument faces the initial hurdle that some readers may view *any* thesis that involves the west-coast American counterculture as inherently flaky. Scholars who advance historical theses regarding various social sub-groups — migrant farm-workers or Jamaican immigrants, for example — have little difficulty being taken seriously. Those who make claims about the contribution of the hippies, however, may be tainted or marginalized by the disrepute in which the objects of their study are widely held. Some readers may be reluctant to credit a claim that any group as naïve and hedonistically self-indulgent as the hippies could have *any* historical impact, and in particular, that a group characterized by anti-intellectualism, Luddism, and drug use could have affected the growth of hi-tech.

However, Markoff is undeniably on to something. The phenomenon of the early 1960s exposure of Stanford's hi-tech community to psychedelics has been touched on before in works dealing with the history of LSD in North America,⁹ but not in ways that sought to explore the downstream impacts on personal computing. And when we turn to accounts of the developments in computing in this period, most of those either ignore the counterculture altogether,¹⁰ or mention it only in passing.¹¹ In so doing, they are leaving something out of the picture. An instructive illustration here is Freiburger and Swaine's 1984 study *Fire in the Valley*.¹² That tale of the rise of personal computing made passing reference to the fact that the "late 1960s were a turbulent time on American college campuses, a time when many were questioning received values and structures and building their own".¹³ Yet, although the counterculture loiters in the background of *Fire in the Valley*, nothing much is ever made of it in the text. Interestingly, however, when the reader of *Fire in the Valley* turns to its 32 pages of photographs and notes that the young men pictured there have shoulder-length hair, blue jeans, and,

at least in one case, a psychedelically-painted VW microbus, one cannot help but feel that something has been left out of the picture by not considering the effects of the counterculture on the development of the personal computer.

It is this gap that *Dormouse* purports to fill. To be sure, its theme is not completely original. Steven Levy's book *Hackers*¹⁴ certainly demonstrated that in the 1960s and 1970s, significant developments in computing, especially in software, were due to nonconformist individuals working outside the typical corporate and academic environments. But although Levy's account touched intermittently on the links between adventurous computer visionaries and the Computer Lib and anti-war movements, he demonstrated little interest in Markoff's chief theme: psychotropic drugs and the associated Merry Pranksterish mindset. Theodore Roszak, the man who coined the word "counterculture", had expounded on the computer/LSD link in his 1985 Alvin Fine Memorial Lecture, subsequently published as *From Satori to Silicon Valley*.¹⁵ However, Roszak's work was sociological analysis. What Markoff purports to offer in *Dormouse* is history. Moreover, it is history of a certain sort, based on Markoff's extensive personal interviews with the surviving participants. This sort of book will not be possible in another 30 years, for by then the *dramatis personae* will be dead.

The result is an assured and intriguing account of interesting times. There is much that is new here, including doubt cast on the widespread view that it was Steve Dompier who liberated/stole Altair BASIC from Bill Gates.¹⁶ To be sure, Markoff slips here and there: his account of Moore's Law is imprecise, the Viennese-born Ivan Illich was not a "radical Chilean educator",¹⁷ and Atlanta was not the city in which the Québec–Washington–Guantánamo peace marchers were beaten and jailed.¹⁸ In addition, Canadian readers will snicker at Markoff's references to such non-existent institutions as the University of Vancouver and the University of Ontario.¹⁹ But these are minor gaffs that do not undermine our confidence in the author's assured feel for the period. *Dormouse* is pleasant and untaxing reading. The only significant qualification to that is that for readers who place a high priority on precise chronology, Markoff does not provide dates often enough. This shortcoming is compounded by a structure that eschews a consecutive account. *Dormouse* adopts the "great man" approach to history and focuses on a number of individuals — Doug Englebart, Myron Stolaroff, Fred Moore, Stewart Brand, John McCarthy and Larry Tessler. For each, Markoff offers a brief overview of their formative years, and then brings them to Palo Alto in the late 1950s or the 1960s, at which point the account becomes more detailed. Then, when we encounter the next individual whose contribution will be examined in detail, we backtrack (flashback?) to their early days and repeat the process. The reader interested in chronology will have to invest

too much mental energy in remembering what year Markoff is dealing with on any given page. However, that aside, *Dormouse* is a respectably researched, engagingly written, and provocative tale.

But is it anything more than mere provocation? The book is not heavily theorized. For instance, no attempt is made to group the hippies and the computer pioneers together as late flowerings of questing romanticism, standing side by side at the same crossroads. *Dormouse* excels as a catalogue and chronicle. We should be grateful to Markoff for the fine legwork, but at the analytical level, the book seems like a missed opportunity.

However, perhaps that is to criticize a book that is principally a historical study for not also being a work of sociology. The real problem with *Dormouse* is that, even assessed as a work of history, it fails in a primary obligation. Markoff is frustratingly imprecise about his central thesis — the *nature* of the connections between west-coast 1960s counterculture (LSD in particular) and the birth of personal computing; in particular, the computer interface we continue to use. Markoff is adept at showing that a number of the persons who were instrumental in the rise of the personal computer — from Doug Englebart to Steve Jobs — dropped acid during the 1960s, and that like most who did, they were mightily impressed by it. He usefully catalogues the aesthetic parallels between the geeks and the freaks — the beards and beanbag chairs that were found both in hippie communes and Stanford computer labs, but not at Honeywell or IBM.

But in what sense might it *matter* if some of the code that still supports the Internet was written by a stoned, long-haired anti-war activist? More to the point, did LSD make any *causative* difference to the timing or nature of the development of the personal computer? On these questions, it is no easy matter to pin Markoff down. He writes that those “computer technologies that we take for granted today owe their shape to this unruly period, which was defined by protest, experimentation with drugs, counter-cultural community, and a general sense of anarchic idealism.”²⁰ This appears to gesture toward a causal connection. However, something owing its shape to a period that was defined by X is quite a different thing from owing its shape to X.

Markoff further muddies the waters on this crucial point by unnecessarily resorting to drug-related metaphors. For instance, of Moore’s Law, he notes that it “was a straightforward insight, but for those who made the leap it was the mind-expanding equivalent of taking a psychedelic drug.”²¹ Apart from being unhelpfully hyperbolic — coming to terms with the implications of Moore’s law can be startling, but compared with dropping acid, it’s small beer — such metaphorical flourishes tendentiously complicate the task of trying to isolate a thesis about the connections between mind-expanding drugs and the birth of personal computing.

Of course, this is a work of history, an area where those who assert a causal hypothesis are rarely able to rigorously prove it to the satisfaction of all. However, difficulties of irrefutable proof do not absolve historians of the obligation of at least *trying* to advance and substantiate some causal claim. And the potential claim that might arise from *Dormouse* is a significant one. If LSD is an interesting backdrop to the development of personal computing, that is one thing, but if exposure to psychedelics facilitates advances in the field of information technology, then that is rather more important. It might prompt some countries to rethink their criminalization of those chemicals. Markoff’s extensive interviews laid the groundwork for advancing a claim about the effects of psychotropic chemicals on changes in information technology, and it is a pity that opportunity was not pursued.

There is a second and related way in which Markoff’s claims are exasperatingly vague: *viz.*, his attempts to draw parallels between the period on which he focuses — roughly 1959 to 1975 — and the situation today. Markoff notes that the scene today is characterized by a “schism between information proprietarians and information libertarians [that] divides not only the computer industry but increasingly the entire digital world, affecting the consumer electronics, recording, and motion picture industries.”²²

He observes that during the period he is examining, “the idea that the codes were intellectual property was actually laughable to the experimenters.”²³ His claim appears to be that there is something about computer technology that flourishes best in a non-hierarchical culture of personal experimentation under a depropertyized legal regime. If that comedy-of-the-commons vision is justified, then again, it might have consequences for a range of legal issues current before courts and legislatures, from the war on drugs to the war on cyberpunks.

But *Dormouse* is insufficiently elaborate on this connection. For one thing, Markoff ends his narrative in the mid-1970s without any serious attempt to track the subsequent morphing (not to mention repackaging) of 1960s counterculture. He mentions the post-1975 scene only to imply that there is a direct link between today’s file sharers (a.k.a. cyberpunk thieves) and the homebrew computer pioneers of the early 1970s. Evoking a parallel between the propertarian/libertarian split of today and the IBM/LSD split of a generation ago raises interesting questions. Conceivably, some parallels of at least an attenuated nature can be drawn. However, to explore them adequately, one would need to offer some account and interpretation of the intervening years. After all, the period from 1975 to 2005 was not without its significant historical and cultural developments: disco, AIDS, the Internet, cocaine, the end of communism, punk and grunge, 9/11, hip hop, the war on terror, awareness of imminent environmental collapse, etc. Any attempt to

extract lessons from the Palo Alto of the 1960s and early 1970s, and apply them to the debates among today's knowledge workers, would seem to require some effort to factor those developments into the equation. Markoff offers none; he simply adverts to the debates in the period that he studies and suggests that they offer lessons for resolving, or at least understanding, today's struggles.²⁴

At the end of the day, *Dormouse* is a diverting read that brings to light some interesting facts and gestures

Notes:

¹ Charles Dodgson, *The Letters of Lewis Carroll*, ed. by Morton Cohen (New York, Oxford University Press, 1979) at xvii, 258, 369 and 706.

² Grace Slick, "White Rabbit", on Jefferson Airplane, *Surrealistic Pillow* (RCA, 1967). Citation of "White Rabbit" presents perplexing difficulties. The most authoritative source on citation of music in Canadian legal scholarship prescribes citation to "the song's first appearance on a commercially available song recording": Vaughan Black and David Fraser, "Cites for Sore Ears (A Paper Moon)" (1993) 16 *Dalhousie L.J.* 216 at 229. But the purpose of that rule is to give a clue as to the song's date. In the case of "White Rabbit", Slick had written and performed that song as a member of The Great Society, and she brought it with her when she joined the Jefferson Airplane. After the Airplane hit it big, Columbia attempted to cash in on Slick's name by issuing a live recording by The Great Society: *Conspicuous only in its Absence* (Columbia, 1968). That album features a version of "White Rabbit" performed at The Matrix in 1966, the year before *Surrealistic Pillow*.

³ The Dormouse in *Alice in Wonderland* uttered no such words. Furthermore, it is worth noting in passing that by the mid-1970s, at about the time that Bill Gates was getting Microsoft off the ground, Slick, singing with the Jefferson Starship, was known to alter the lyrics in concert and sing "keep your head" — which can be sage advice when monopolists are in the ascendant.

⁴ John Markoff, *What the Dormouse Said: How the Sixties Counterculture Shaped the Personal Computer Industry* (New York: Penguin, 2005) [*Dormouse*].

⁵ John Markoff & Tsutomu Simomura, *Takedown: The Pursuit and Capture of Kevin Metnik, America's Most Wanted Outlaw — By the Man Who Did It* (Boston: Little Brown, 1996); Katie Hafner & John Markoff, *Cyberpunk: Outlaws and Hackers on the Computer Frontier* (New York: Simon & Schuster, 1991); John Markoff & Lenny Siegel, *The High Cost of High Tech: The Dark Side of the Chip* (New York: Harper & Row, 1985).

⁶ Douglas Coupland, *Microserfs* (New York: HarperCollins, 1996) at 33.

⁷ Markoff, *Dormouse*, *supra* note 4 at 66-67.

⁸ *Ibid.* at 67. Englebart's tinkle toy was a small waterwheel that would float in a toilet bowl and spin when peed upon, thus operating as a potty-training device.

⁹ Jay Stevens, *Storming Heaven: LSD and the American Dream* (New York: Atlantic Monthly Press, 1987) 177-79. See also Tom Wolfe, *The Electric Kool-Aid Acid Test* (New York: Bantam Books, 1969), 145.

toward some significant claims about them, but then sacrifices any serious attempt to articulate and substantiate those claims, and lapses instead into overstatement and sensationalism. One value shared by the hippies and the computer visionaries of the 1960s was that they were not in it simply for the money. There is room for doubt about whether the same can be said for John Markoff's *Dormouse*.

¹⁰ As with Tracy Kidder's admirable *The Soul of a New Machine* (Boston: Little Brown, 1981) and Katie Hafner & Matthew Lyon, *Where Wizards Stay up Late: The Origins of the Internet* (New York: Simon & Schuster, 1996).

¹¹ Paul Freiberger & Michael Swaine, *Fire in the Valley: The Making of the Personal Computer* (Berkeley: Osborne/McGraw Hill, 1984); Michael Hiltzik, *Dealers of Lightning: Xerox PARC and the Dawn of the Computer Age* (New York: Harper, 1999) at 155-62. Note also the prescient article by Stewart Brand about the denizens of Xerox PARC, "Spacewar: Fanatic Life and Symbolic Death among the Computer Hackers" (Dec. 7, 1972), 123 *Rolling Stone* 50, which began by proclaiming that computers were the best news since psychedelics.

¹² Freiberger & Swaine, *ibid.*

¹³ *Ibid.* at 99.

¹⁴ Steven Levy, *Hackers: Heroes of the Computer Revolution* (Garden City, N.Y.: Doubleday, 1984). See especially 131-32, 150, 155, 157, 164 and 167.

¹⁵ Theodore Roszak, *From Satori to Silicon Valley* (San Francisco: Don't Call it Frisco Press, 1986). In the end, Roszak concluded that the marriage between the counterculture and computers was unlikely to last: "I suspect there is an insurmountable hostility between the large scale technology on which the computer industry is based and the traditional values that the counterculture wished to salvage. The military-industrial complex batters off the gigantism of advanced technology; it is not the ally of communal or organic values." (At 48.)

¹⁶ Markoff, *Dormouse*, *supra* note 4 at 284.

¹⁷ *Ibid.* at 196

¹⁸ *Ibid.* at 186. The beatings took place in Albany, Georgia.

¹⁹ *Ibid.* at 24 and 100, respectively.

²⁰ *Ibid.* at xii.

²¹ *Ibid.* at x.

²² *Ibid.* at xix.

²³ *Ibid.* at 281.

²⁴ *Ibid.* at xix-xx and 287.