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The Revolution Will Be Computed: Fantasy, Apple Computer, and the Ethos of Silicon Valley

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THE REVOLUTION WILL BE COMPUTED: FANTASY, APPLE COMPUTER, AND THE
ETHOS OF SILICON VALLEY

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A thesis submitted in partial fulfillment
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Abstract

My thesis undertakes a rhetorical analysis of the discourse surrounding the development of the personal computer and Apple Computer as a case study in Silicon Valley discourse. The analysis spans twenty years (1964-1984) starting with San Francisco-area computer hobbyist clubs and ending with the release of Macintosh by Apple Computer. Symbolic convergence theory (SCT) and fantasy theme analysis (FTA) provide the primary methodology for my work. Because SCT/FTA developed from small group communication research, they are fitting tools for understanding how small groups of people impassioned about building something new can impact public discourse. I connect SCT/FTA with a materialist approach to rhetoric, as well as affect theory and *ethos*. This methodological synthesis contributes to a broader understanding of the complex interplay between environments, objects, and symbols. I conclude that the development of the personal computer was supported by particular environments and five primary fantasies. The personal computer is (1) possible (2) revolutionary (3) democratizing (4) necessary and (5) user-friendly.

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Chapter 1: Introduction

“Despite the impressiveness of the hardware the basic question remains, Why would any community of people conceive of building machines that would hasten mathematical computation and keep extensive records accurately, efficiently, and inexpensively?”¹ This quote is from Ernest G. Bormann, originator of symbolic convergence theory (SCT) and fantasy theme analysis (FTA). When he posed the question in 1983, one year ahead of Apple Computer’s release of Macintosh, approximately 10% of American adults owned a home computer.² Today, approximately 73% own a computer, and 68% own a smartphone, a device with more computing power than boasted by the 27-ton ENIAC, the first electronic general-purpose computer that whirred to life in 1946.³ From 1946 to 1983 to today, the (r)evolution in computing power has been fast and far-reaching with our daily actions increasingly mediated by hardware and software. Instrumental in the evolution of computing technology was the development of the personal computer, a computer small enough and affordable enough for the average American to own. While Bormann may have been concerned with the original iteration of a computing machine, this thesis focuses on the personal computer because it was the first truly public computing machine. By public, I mean accessible and owned by many people. By attending to the language they used and the symbols they employed, I examine how the Silicon Valley pioneers of the personal computer depicted computers to each other and to the public. My research focuses primarily on an iconic Silicon Valley company, Apple Computer. Specifically, I look at the communication of Apple employees, Apple corporate communication, and Apple computers, as exemplars of the rhetoric that imbued the personal computer with value and moved it from an elite periphery to home desks across America. Bormann’s question above is particularly interesting because I employ his theory and methodology (SCT and FTA) in my

analysis. In order to capture the multifaceted dimensions of rhetoric that I see at work in the history of the personal computer, I incorporate the classic Greek concept of *ethos* and contemporary work in affect theory. I conclude that the personal computer was hastened by the interplay between material possibilities, affective connections, and symbolic compulsions of five primary fantasies: The personal computer was (1) possible (2) revolutionary (3) democratizing (4) necessary and (5) user-friendly.

My interest in the development of the personal computer began with a question regarding the contemporary influence of Silicon Valley, a California region noted for its contribution to technology. Researching the region pointed me back to a scene of passionate microcomputer hobbyists high on the spirit of 1960s counterculture.⁴ In the newsletters and retellings of hobbyist club meetings I discovered stories and values that despite their years sounded similar to the narratives of Mark Zuckerberg, Facebook and other Silicon Valley founders and startups. As early as the 1950s there were stories of rebellious entrepreneurs taking risks with trailblazing innovations and striking figurative gold in the Valley of the Heart's Delight.⁵ I realized that to understand Silicon Valley today I needed to understand where it began, and it began largely with silicon chips and microcomputers. Tracing the development of the microcomputer and its concurrent narratives led straight to the founding story of Apple and their personal computers.⁶ Apple offers an exemplary combination of narratives and objects for excavating the archetypal fantasies of the region— revolution and innovation, to name just two.

The pervasiveness of computers today increases the significance of Bormann's question as to "why" humans built computers in the first place. A computer mediated world is inescapable, and this thesis aims to understand both how the computer came to be and the implications of experiencing the world through a machine through an analysis of rhetoric.

Answering “why” contributes to a critical perspective on the impact of computers, and because of Silicon Valley’s role in the development of computers, on the nature of the region’s effect on the national *ethos*. To tackle these questions, I employ Bormann’s fantasy theme analysis to provide a rhetorical criticism of the texts that led to and popularized the personal computer. In the next section, I provide an overview of Bormann’s Symbolic Convergence Theory (SCT) and fantasy theme analysis (FTA) and explain how my research utilizes both along with the concepts of *ethos* and affect theory.

Bormann’s Symbolic Convergence Theory and Fantasy Theme Analysis

SCT is a communication theory that explains how groups of people come to share a common perspective on the world. The theory applies to groups small and large, and its most basic premise is that people have a tendency to explain and understand the world with stories or fantasies. In other words, SCT is grounded in an “ontological assumption that human beings are natural dramatizers.”⁷ When dramas resonate with groups of people they start to shape a worldview by transmitting values, emotions and motives. Bormann called groups of people who share multiple stories “rhetorical communities” to reflect the role that rhetoric plays in bringing people together. A rhetorical community is a group of people who because of common stories share ways of talking about and judging the world, or what Bormann called a *communication style*. The standards of a communication style include the grounds for proof and judgment, which are connected to the Greek concept of *ethos*.⁸ SCT starts with a group of people engaged in storytelling and ends with a community that shares both “norms of communication” and a “social reality filled with heroes, villains, emotions and attitudes.”⁹

Because of its postulate that stories can create the basis for rational arguments and particular worldviews, SCT offer apt insights into the development of group identity and

rhetorical communities. SCT offers an explanation for how a shared worldview is created, shared, and propagated through language. “Symbolic” refers to the use of imaginative language, in opposition to what Bormann called material and social facts, and “convergence” refers to the sharing and acceptance of imaginative language among groups of people, or the union of symbolic worlds.¹⁰ The convergence starts with a small group of people sharing stories or explanations about events in the past or the future, the *fantasy theme*. Because my research focuses primarily on rhetorical communities, specifically hobbyist computer clubs, Apple employees, and Apple consumers, SCT and its sister methodology fantasy theme analysis (FTA) provide pertinent tools.

The development of SCT and FTA started with concurrent research programs dedicated to small group communication at Harvard and University of Minnesota in the early 1970s. In the published findings of the Harvard research program, *Personality and Interpersonal Behavior*,¹¹ Robert Freed Bales outlined categories of communication behaviors for use in content analysis of small group communication. The categories were positive actions, attempted answers, questions, and negative actions. “Dramatizes” was included in positive actions along with “seems friendly” and “agrees.” Dramatizes refers to a situation in which a group actively engages with a particular narrative:

[T]he group may respond to the message by growing excited and expanding or adding to it. The tempo of the conversation quickens, others join in, and a chain reaction takes place. The members respond in an emotionally appropriate way. That is, they express emotions such as happiness, sadness, anger, and pleasure in a way that fits into the initial mood of the dramatization.¹²

When Bormann read that *Personality and Interpersonal Behavior* defined “dramatizes” by “listing things like double entendre, stories, jokes, narratives, analogies, metaphors . . . [he] promptly announced at a noon research meeting at Minnesota that Bales had discovered

rhetorical criticism.”¹³ Bormann considered double entendre and the like common objects of analysis for rhetoricians.

Building on Bales’ concept of dramatization, Bormann and his colleagues proceeded to construct a grounded, general theory of interpersonal communication that relies upon rhetorical analysis to explain the development of shared consciousness, which for SCT scholars meant the use of common language to explain actions. “Grounded” means that the theory was derived directly from social scientific research and observation. “General” means that the theory attempts to explain a universal condition of communication, in this instance, “a description of the dynamic forces that provide a necessary and sufficient set of causes to explain the discovered communication patterns. For an evolutionary theory the dynamic may be the survival of the fittest. For SCT the dynamic is the process of sharing group fantasies.”¹⁴ Group fantasies are the building blocks of communication practices. Communication practices produce a rhetorical community that “creates a symbolic reality that both denotes and becomes its consciousness (Bormann, et al., 1994). The resultant symbolic structure (consciousness) is constitutive of the collectivity’s view of reality.”¹⁵ Fantasies are more than engaging stories that groups share; they are the building blocks for a worldview, or to use Bormann’s term, shared consciousness. Rhetorical communities share fantasies that structure their conceptions of the world, and in turn, shape action.

To identify and analyze fantasy-sharing, Bormann and subsequent scholars developed a particular methodology: fantasy theme analysis. In other words, FTA is the method to SCT’s theory. To accomplish fantasy theme analysis, SCT provides an evolving taxonomy (See Table 1). My research is not concerned with a vigorous employment of the many concepts of SCT. Instead, I employ FTA alongside the classical concept of *ethos* and modern theories of affect,

and therefore, only draw upon the fundamental tenets of FTA. The concepts that I use in my analysis unfold as follows: A small group of people share stories about people or events that occur either in the past or in the future, a *fantasy theme*. Fantasy themes tap our tendency to understand the world through a narrative and “provide an organized artistic explanation of happenings.”¹⁶ The explanation becomes “a social reality which makes sense out of the blooming buzzing confusion of the experience.”¹⁷ In this thesis, the phrase fantasy theme is used interchangeably with story, drama, and narrative because a fantasy theme is essentially a story. Stories that elicit a shared emotional response *chain out*; they are repeatedly shared because they resonate affectively. A *saga* is a particular type of *fantasy theme* that provides “a detailed account of the achievements in the life of a person, group, community, organization, or nation.”¹⁸ Because the concept is grounded in a 1992 study of a Fortune 500 company, *saga* is particularly relevant to my analysis of Apple Computer.¹⁹ While a fantasy theme is an entire narrative, a *symbolic cue* is a “shorthand indicant or code that stands” for and evokes the theme. A cue can be a “sign or symbol or an inside joke.”²⁰ A well-known logo, such as the Nike swoosh or Apple’s bitten fruit, is a good example of a symbolic cue. The swoosh brings to mind the athleticism and “just do it” attitude of the brand. If shared often, a theme can also become a stock scenario “used to explain new events in a well-known dramatic form.”²¹ This is a *fantasy type*. For example, “witch hunt” is a fantasy type. The use of the phrase “witch hunt” implies a situation in which overzealous individuals are thought to be out to punish someone unjustly by evoking the story, or *fantasy theme*, of the Salem witch trials. When several themes or types coalesce into a broader worldview, it has become a *rhetorical vision* with the power to shape both irrational and “rational” thought.²² In Bormann’s words, a rhetorical vision is a “composite drama that catches up large groups of people in a symbolic reality.”²³ Fantasy themes “go

public” when, most often, through mass media the themes reach a broader audience with a propensity to “take up the dramas in small groups of acquaintances, and some of the derivative dramas again chain out . . . [T]hus the rhetorical vision is propagated to a larger public until a rhetorical movement emerges.”²⁴ The task of FTA is to identify fantasy themes, fantasy types, and resulting rhetorical visions and to map the chaining out.

SCT and FTA have been employed by a diverse group of scholars to address communication problems in a wide range of contexts from interpersonal studies to mass communication. In a review of three decades of SCT scholarship, Bormann along with John F. Cragan and Donald C. Shields divided the fields of communication scholarship that have utilized SCT as follows: interpersonal, small group, public, organizational, mass and interpersonal.²⁵ In addition to fantasy theme analysis, research drawing from SCT has employed social scientific methodologies. Cragan and Shields contributed significantly to the early development of the theory with a series of empirical investigations. In 1981, they edited a book dedicated to the application of SCT.²⁶ They also published several articles that employed a quantitative analysis of messages in the context of political campaigns and corporate communication.²⁷ The quantitative studies were intended to provide empirical support for SCT. In one study, Cragan and Shields identified three foreign policy dramas dominant in the media and employed a Q-sort to determine which drama was most appealing to a group of citizens in Peoria, Illinois.²⁸ They then created a computer program that interpreted their findings to write a “successful” speech for a Peorian audience.²⁹ This study is particularly interesting in the context of my research because the study spawned several newspaper articles warning against the Orwellian-danger of computer-directed politicians.³⁰ A journalist shared: “Asked if the method would be perfected in time for use during the 1980 presidential campaign, Dr. Shields said: ‘Yes. Not to mention 1984.’”³¹

Because of its association with Big Brother-totalitarianism, the year 1984 was often utilized to symbolize suspicion of the role of computers.

Turning to fantasy theme analysis, Bormann himself first employed FTA in a 1973 analysis of the media controversy surrounding presidential nominee George McGovern's selection of Thomas Eagleton as a running mate.³² Bormann argued that McGovern's decision to replace Eagleton as a running mate became a central fantasy in the depiction of McGovern as inconsistent. More recent work has utilized FTA to study the "de-conversion" of Christians through the analysis of an online community, the "real life implications" of role-playing game Dungeons and Dragons, and the "themes implicit in the construction of motherhood" in the *What to Expect* series on childbirth and rearing.³³ In a 2006 article, Mark West and Chris Carey examined how President Bush and Vice President Cheney employed "frontier mythology as a fantasy theme" in the wake of the tragedy of 9/11 to create a rhetorical vision that helped audiences cope with the terrorist attack, as well as to solidify a partisan base and coerce international allies to support a declaration of war.³⁴ Whether employed with statistics and computers or in rhetorical criticism, SCT and FTA have proven to be rich resources for examining the interplay between small group communication, mediated messages and public awareness.

Writing in 2003, however, Joshua Gunn argued that G.P. Mohrmann's "barbed criticisms" published in the 1980s "betokened the diminished popularity" of SCT.³⁵ Gunn's contention was refuted by Bormann as overstated, but a recent encounter with a former student of Bormann highlights a dismissal of FTA by some rhetorical scholars.³⁶ I asked him what his thoughts were regarding fantasy theme analysis, and his response was to question, "You have an entire mint of rhetorical tools to choose from, why fantasy? Why not dramatism or ideographs

or...?” His voice faded as if to make the point that any number of other tools could accomplish the task as well as, if not better, than the flight of fantasy. He actually seemed to scoff at the very word, *fantasy*, as if it naturally meant that the resultant work would be more George R. R. Martin than George A. Kennedy. However, as the subsequent chapters will reveal, fantasy theme analysis uncovers the dynamics of group communication that were crucial to the culture of Silicon Valley and the development of the personal computer. By attending to the interplay between small group, corporate and mass mediated communication, FTA fosters insights that other concepts, such as ideographs or Burke’s dramatism, would have overlooked. SCT and FTA also allow me to contribute to scholarship on *ethos* and affect. In the following section, I offer brief summaries of *ethos* and affect theory and place the primary themes of both in conversation with Bormann’s theory and methodology. *Ethos* and affect provide a conceptual framework for explicating the relationship between environments, fantasy and rhetorical standards of judgment.

***Ethos* and Affect Theory**

Bormann conceptualized fantasy themes as narratives told by individuals in a group setting that depict characters playing out a dramatic event either in the past or the future. Fantasy themes can portray members of the group, the group as a whole or even public or fictional figures, and the events themselves can be fact or fiction as long as they occur in the past or future. Drawing from scholarship on *ethos* and affect, I work to answer the following questions: How do technology and the characteristics of an environment support or constrain the development of particular fantasy themes? Are fantasy themes energized by one setting and defused in another? How do fantasy themes work to shape *ethos*, and in turn, condition action that individuals do or do not take? Examining *ethos* and affect in the context of SCT enables me to address these questions.

The genealogy of the concept of *ethos* reveals that its meaning is contested.³⁷ For Aristotle, *ethos* was an intentional resource used to convey the character of the rhetor in the speech act. Conceptualized as such, factors outside of the speech act itself, for example the general reputation of the rhetor, were not relevant. Instead, *ethos* referred only to the methods a rhetor could use to suggest good character, which was a key element of being persuasive. Since the time of Aristotle, much has been said regarding *ethos*, including the ethical dilemma of depicting character that may or may not be a reflection of a rhetor's true reputation. Scholars recognize that even Aristotle's conception of *ethos* was fluid. Throughout his *Rhetoric*, Aristotle draws from the etymological family of the term "as *ēthos* (the apparent trustworthiness of a speaker's rhetorically constructed self-image); *ēthos* (moral character as reflected in 'custom' or 'habit'); *ēthē* (the various character types identifiable with each audience, including the *ēthē* of political states; and *ēthopoiea*, the verbal depiction of character)."³⁸ Thus, it is not surprising that the concept has evolved over the centuries or that "an effective Hellenic *ēthos* (such as the Greek orator Lysias creates or the philosopher Aristotle theorizes) differs palpably from the *ēthos* of the Roman orator and statesman Cicero, which differs in turn from Saint Augustine's early Christian *ēthos*, Machiavelli's Renaissance *ēthos*, Campbell's Enlightenment *ēthos*, Burke's modern *ēthos*, Barthes's postmodern *ēthos*, and so on."³⁹ What is clear is that *ethos* relates to character and that it is situational.

The situatedness of *ethos* is supported by etymology. Scholars, such as Charles Chamberlain, have noted that the "Homeric usage refers *ēthos* to the 'haunts' or 'arena in which people and animals move'" and eventually, "to the peculiar characteristics which citizens of a polis acquire as part of their civic heritage."⁴⁰ William Sattler argued that "Aristotle appears to be saying that the power of custom and tradition is strong; and that the speaker who conforms to

the ethos of the class—who likes what we like—will be highly regarded.”⁴¹ Both of these interpretations support the conception of *ethos* that I want to advance, an *ethos* that is inextricably linked to environment. Without being situated within a particular environment, whether the environment is a corporate committee or geographic region, *ethos* cannot be theorized. Character does not exist independent from context. Carolyn Miller provided an elegant summation of this approach to *ethos*. She defined *ethos* as “our understanding of personal character as interpreted against a cultural set of possibilities.”⁴² Her definition is well-suited to my project as she too was concerned with the impact of technology, specifically the *ethos* of technology. *Ethos* is not character alone; it must be interpreted against the potential outcomes proffered to us by our cultural situatedness. I adopt Miller’s definition of *ethos* for the purposes of my analysis. The next question I seek to answer is, how do individuals come to embody the “cultural set of possibilities”? To connect *ethos* with FTA I contend that rhetorical visions carry with them a distinct *ethos*, or in Bormann’s terms, communication style. My thesis specifically works to examine the relationship between the personal computer and a set of possibilities as reflected in the rhetorical vision of Silicon Valley, or a Silicon Valley *ethos*. In my analysis, “rhetorical vision” refers to a collection of archetypal fantasy themes; “*ethos*” refers to the values and actions favored by the rhetorical vision.

Miller argued that, in shaping action, technology itself directly impacts the *ethos* of the person using the technology. Through the use of technology, “a person undertakes action to overcome a situation, and in such action develops an understanding of how the world works; action shapes character, and in turn, this character influences future action.”⁴³ Action that results in outcomes is the most direct way of experiencing possibility. By expanding the realm of possible action, working with technology also influences a technology user’s expectations of

others. Community is integral. “[T]his approach to ethos requires some understanding of the purposes which inform action; it requires an ability to share the consciousness which makes the action reasonable. . . . In this way, action is related to both the personal formation of mental character and the collective development of cultural character.”⁴⁴ Miller’s depiction of the creation of “cultural character” is supported by SCT’s contention that rhetorical visions are “constitutive of the collectivity’s view of reality” and provide the “rules, warrants, and grounds for argument” within a group.⁴⁵ In Miller’s terms, the development and use of technology results in a distinct *ethos* that values “the goal of efficiency and the absorption of the individual person into the corporate group,” “the tendency to conceive of the world as a closed system,” unchecked optimism, and “mathematical methods of precision and control.”⁴⁶

In a 2004 essay on *ethos* in the context of human-computer interaction, Miller traced what she considered to be an evolution of the technological *ethos* she had originally theorized in 1978. Miller suggested that the *ethos* of computers has shifted from that of an “expert system” to an “intelligent agent.” Computers as originally programmed functioned as an expert, a database of infallible information to be retrieved. In this configuration, a person using a computer might describe using a computer as similar to talking with an expert. Today, computers are programmed to create a more interactive, responsive experience mirroring the sensation of working with an intelligent agent. The stories, or fantasy themes, that map to the computing experience have changed. I am interested in examining the *ethos* of technology as represented by personal computers and contributing to a better understanding of how culturally-situated *ethos* evolves through the concepts of fantasy theme analysis.

As Miller demonstrated, action is an important component of *ethos*. In addition to action, my research analyzes language, specifically fantasy themes, and affect. Action, fantasy, and

affect work together to construct *ethos*. *Ethos* is character as judged against a cultural set of possibilities as shaped by fantasy. I conceptualize affect as the embodiment of cultural possibilities in individuals. Because of the stories we have connected with and actions we have taken, our bodies have a “notion” to react in certain ways and to feel certain things when confronted by a new situation. Fantasy and past action suggest to each of us what is possible. That “notion” is how I think about affect. This conception is my own. Affect helps explain why certain fantasy themes chain out and others do not. Before a fantasy can take hold of a group, it must be embodied by individuals. In my conceptualization, *ethos*, or character, is the expectation of values embodied through fantasy. Fantasy themes works to both transmit and reflect that embodiment. In the next section, I will explore contemporary work in affect briefly and connect it with SCT before providing an overview of the following chapters.

Scholarship drawing from affect theory works to reinstate the breathing, sensing, moving human body into the humanistic tradition, a tradition that has historically relied upon a mind/body dualism. While much ado is made about the contemporary nature of affect theory, Debra Hawhee argued that the forefathers of rhetoric were equally concerned with the connection between body and rhetoric. Greek rhetors theorized that “[t]he body itself becomes a *sundromos*, an intensive gathering of forces . . . trafficked through and by neurons, muscles, and organs. Entwined with the body in this way, rhetorical training thus exceeds the transmission of ‘ideas,’ rhetoric the bounds of ‘words.’”⁴⁷ A rhetorical mind cannot exist independent of bodily sensations. At the same time, however, affect theory does not accept an explanation of the body that presumes an unconquerable Id and simplistic drives, partially because here again there is an assumption of a mind/body dichotomy in which a guided mind unlocks the repressed body. For affect scholars, such as Brian Massumi and Eve Sedgwick, mind and body are not in conflict.

Instead, they are an inseparable unity immersed in a field of “visceral forces beneath, alongside, or generally *other than* conscious knowing . . . that can serve to drive us toward movement, toward thought and extension . . . or that can leave us overwhelmed by the world’s apparent intractability.”⁴⁸ In this conceptualization, “forces” other than “conscious knowing” are affect.

While often labeled “emotion,” affect is not emotion because affect is presubjective. Emotion demands a subject in order to be experienced. Emotion is not affect; the emotional response is conditioned by affective connections. Someone feels happy or sad because their body has been conditioned by language or action to appraise a situation as good or bad. Affect is the force that compels humans to be social, to forge connections with other humans, or perhaps to dramatize in a small group setting. In place of a decentered subject challenged to articulate motives, affect theory offers a body pulsing with potentiality:

From the standpoint of affect, society is inscribed on our nervous system and in our flesh before it appears in our consciousness. The affective body is by no means a *tabula rasa*; it preserves the traces of past actions and encounters and brings them into the present as potentials: ‘Intensity is asocial, but not presocial [...] the *trace* of past actions *including a trace of their contexts* [are] conserved in the brain and in the flesh’ (2002:30: original emphasis). Further, ‘The trace determines a tendency, the potential, if not yet the appetite, for the autonomic repetition and variation of the impingement’ (ibid.:32).⁴⁹

A society “inscribed on our nervous system” parallels a rhetorical vision and *ethos* embodied by an individual. “[T]races of past actions” could reference the use of technology or the past sharing of fantasy themes in a group, and a “trace of their contexts” mirrors my concern with the role of environment. In contrast to the decentered subject held hostage by unknowable drives and chimeric signifiers, affect theory offers the body as a depository of and enactor of motives. The task is to understand the process of impression that leaves behind “traces.” It is my contention that these traces are the cultural set of possibilities transmitted by fantasy, action, and environment that are the prerequisites for *ethos*.

To ascribe a process to affect may appear counterintuitive because, as the title of the opening essay in *The Affect Theory Reader* “An Inventory of Shimmers” suggests, some scholars presume that “there is no pure or somehow originary state for affect.”⁵⁰ However, in order to approach affect from a rhetorical perspective, it is important to have terminology for talking about how affect can be shaped. In his work on virtual reality, cultural theorist Pierre Lévy provided an initial vocabulary for affective dimensions. Lévy proposed that “affect can be analyzed along four complementary dimensions: topological, semiotic, axiological, and energetic.” These dimensions are significant for understanding the affective potentials of both individuals and collectives. Lévy’s theory shares a conception of collective consciousness with symbolic convergence theory; he calls the consciousness *collective intelligence*. Topological elements include considerations such as space and connections. Symbols, signs, and messages are labeled semiotics, and this includes language, which is my primary object of analysis in the following chapters. Axiological concerns are value related; are ideas positive or negative? Lastly, energetics captures the relative strength of values and commitment to representations. When talking about energetics, it is an issue of values being strong or weak, privileged or disfavored. A massive advertising campaign is energetic because, if successful, it elevates the prominence of a brand’s values. Lévy noted that these dimensions function in parallel, not sequentially. In other words, axiological judgments do not necessarily precede language. The “message is itself an affective agent,” which returns to my earlier point that language both transmits and reflects affect.⁵¹ While I attend to topology, axiology and energetics throughout my analysis of the development of the personal computer, in doing rhetorical criticism, my primary concern is with language, or to employ Lévy’s term, semiotics. Semiotics, or for purposes of this analysis fantasy themes and rhetorical visions, contribute to and reflect the development of cultural possibilities that are

realized and reinforced through action or the production of additional texts. For example, the affirmation of the Apple I motivated the creation of the Apple II. If the action or texts are in line with cultural expectations, or rhetorical visions, they meet the requirements of *ethos*. I contend that action and texts that meet the expectations of *ethos* are more likely to be actualized than those that are not. They are also more likely to be chained out and contribute to a shared rhetorical vision.

Some scholars may question my regrounding of SCT in affect because Bales was Freudian and Bormann's initial work on SCT drew from the findings of Bales. There is no real reason why Bales and Bormann could not offer separate explanations for the chaining out of fantasy. SCT's non-Freudian explanation for how group consciousness works has been supported by research. The pro-Freud position against SCT is only relevant if you believe that psychoanalytic methodology provides a more accurate depiction of human agency and a more useful approach to rhetoric. This is the contention of Joshua Gunn in a 2003 article in which he critiqued SCT and FTA.⁵² The central contention of Gunn was that there are no "transparent correspondences between the substratum of motive and the superstratum of fantasy."⁵³ In other words, fantasy cannot reveal unconscious motivations. The simple answer is, so what? Even if a "substratum of motive," or unconscious, exists and in some way impacts actions, it does not negate the connection between language and action. What is important is that as the fantasy chains out it influences action, including speech. SCT posits that participation in a rhetorical vision constrains and informs action, and that the "meaning, emotion, value, and motive for action are present in the communication."⁵⁴ To the extent that groups share language, then, they share consciousness. This perspective, which is also my own, shares much in common with the concept of agency as articulated by Karlyn Kohrs Campbell.⁵⁵ Specifically, successful

participation in a discourse community demonstrates agency. Second, agency can be communal. Third, agency is both constituted and constrained by context, and lastly, “rhetors/authors. . . are best described as ‘points of articulation.’”⁵⁶ This conceptualization is echoed by affect theory. The presence of unconscious motivations does not negate the existence and influence of consciously shared motivations or agency as articulated by language, especially if empirical research and observation supports the assumptions regarding action.

This section has outlined the concepts that I will use to identify the meaning, emotions, values, and motives present in the discourse surrounding the personal computer. Fantasy themes coalesce into rhetorical visions and *ethos* with affective assistance. Topology, semiotics, axiology and energetics support the chaining out of particular visions, and as the visions become more accepted, they reshape *ethos*. What is ethotic in one rhetorical community may not meet the standards of another. Because of my concern with environments and objects, the fantasy theme analysis I conduct in this thesis also depends upon a conception of rhetoric as material, a conception somewhat opposed to Bormann’s own. In the following section, I explain my definition of rhetoric and place my project within contemporary scholarship on the rhetoric of technology.

Materiality and the Rhetoric of Technology

In their essay on the rhetoric of technology, John A. Lynch and William J. Kinsella drew an insightful connection between technology and rhetoric; both are concerned with invention.⁵⁷ As such, the development of technology could be said to be inherently rhetorical and to draw upon the inventional resources outlined in Aristotle’s *Rhetoric*: *ethos*, *pathos*, and *logos*. In fact, a quick Google search for “technology design and pathos” turns up at least one recent blog dedicated to the general idea: “Using Ethos, Pathos, and Logos to Design Effective Websites.”

Bormann's question regarding the invention of the computer which opened this chapter presupposed a distinction between symbolic invention and material invention. In the same article, he posited a clear demarcation between the materiality of technology and the symbolic revolutions that he contended predated technological innovation. He considered "symbolic changes more significant and, indeed, often prior to and influential in technological changes" and contrasted his viewpoint with a "materialistic interpretation of history."⁵⁸ The invention of the computer, Bormann argued, reflected an evolution in the way that humankind appraised symbolic significance. From Bormann's perspective, the computer was only possible because suddenly a community of individuals valued "progress measured in numbers."⁵⁹ My conclusion is different. His explanation did not recognize the rhetoricity of materiality. I agree that symbols influence technological change, but I do not agree with Bormann's either/or depiction. Instead, I contend that symbols, whether we are talking about words or more complex fantasy themes, exist in a reflexive relationship with materiality. Materiality can both constrain and intensify the appeal of particular symbols, and in turn, the power of symbols can reinforce the development of material reality, such as the engineering of a personal computer. Understanding the influence of the material is necessary for understanding symbols at work.

In this thesis, I examine language alongside material environments (Silicon Valley) and objects (personal computers) from a rhetorical perspective. My approach to environments and objects draws on the work of scholars who have developed theories of material rhetoric.⁶⁰ I take "rhetoric" to be any "text" that works to bring about a change in condition. The work may or may not be intentional, and the change may occur at the level of action or identification. Drawing from the work of Carole Blair, a "text" is any "thing," be it a speech or a landscape, that is readable.⁶¹ To be readable means that an argument can be made that the object in question

functions rhetorically, that it works to bring about a change in condition. In being readable, the thing becomes a source of influence. Thus, a new highway is rhetorical to the extent that it requires commuters to take a new action by traveling a new path, but a rhetorical analysis could only happen if a reasonable argument could be made as to the conditions and impact of the highway, i.e. if the highway could be read. In this way, a material condition, such as a new highway, can be rhetorical, and indeed, there have been deft rhetorical critiques of bridges, buildings, and memorials.⁶² A materialist approach to rhetoric seeks to understand the “rhetorical dimension in the material” and recognizes that we cannot “construct ourselves outside the materiality of everyday life.”⁶³ I take a materialist approach by analyzing both the environment of Silicon Valley and personal computers vis-à-vis design as rhetorical texts. Both the geographical realities of Silicon Valley and the presence and use of a computer work to create particular subject positions for those who encounter them. As such, they are persuasive and constitutive, and as my research will demonstrate, they are readable.

Given my concern with the development of the personal computer, my work draws from and contributes to scholarship on the rhetoric of technology (ROT). I define technology as an object or process that modifies human behavior. Working from this definition, the argument could also be made that rhetoric is in itself a technology. My research is concerned primarily with a technological object—the personal computer as developed by Apple Computer—and the language surrounding it. ROT scholars often employ a materialist approach to rhetoric as they critique how technological objects directly shape persuasion, identification, power, and action.⁶⁴

To be clear, ROT does not share the same concerns as its contested sister, the rhetoric of science (ROS). Carolyn Miller argued that the two fields “are distinct activities—arising from distinct motivations, judged by distinct criteria, and requiring distinct sets of values,” and

therefore, “[r]hetorical analysis which recognizes this distinction is potentially more penetrating, more accurate, and more helpful as criticism.”⁶⁵ Charles Bazerman outlined three distinctions between ROT and ROS. Bazerman recognized that these distinctions are not absolute. However, the differences do provide useful insights into how the work of ROT differs in both approach and argument. Simply put, science’s concern with truth makes questions concerning its rhetorical nature fundamentally different than questions regarding technology’s rhetorical nature. First, Bazerman argued that unlike science, technology “has always been part of the rhetorical barnyard.” Whereas arguments exist as to the degree to which science is rhetorical, technology has always existed in conjunction with decidedly rhetorical fields, such as marketing and commerce. Furthermore, technology has “always been fundamentally designed to meet human ends.” As such, technology is closely related to understanding, shaping, and responding to human wants and desires; its nature is rhetorical because it “must always overtly appeal to the marketplace, political ambitions and personal desire.”⁶⁶ Technology must be sellable, powerful, and desirable. Second, technology differs from science in its degree of enclosure. In its quest for objectivity, science strives to be distinct from the complicated influence of partisanship and publics. In contrast, technology “must often enlist the support of numerous publics.” Technology must always argue “for value in the terms of business, law, government, the public, and consumers.”⁶⁷ My analysis of Apple Computer will demonstrate this to be true by applying the concepts of fantasy theme analysis to texts that speak to these concerns from Apple’s perspective. Lastly, Bazerman noted that technology is notably material in its effect. Generally speaking, technology “produces objects and material processes;” science “produces symbols.”⁶⁸ The materiality of technology “embodies intentions and plans and perceived uses,” and thus, it is the “material object that conveys the primary rhetoric.”⁶⁹ With science, the end results are

typically claims that must be conveyed through symbols. With these distinctions, Bazerman concluded that ROT is “the rhetoric that makes technology fit into the world and makes the world fit with technology.”⁷⁰ This thesis analyzes the rhetoric that made the Apple I, Apple II, and Macintosh “fit into the world.” As Bazerman poignantly argued, what distinguishes ROT from a simple analysis of marketing or corporate communication is that at the center of the multitude of discourses that give rise to and support technology is an object that persists. The object always orients the discourse.

In his book on Edison’s development of electric light and power, Bazerman formulated insightful conclusions regarding the work that communication does to promote and develop technology. Through analysis of texts such as newsletters, newspapers, commercials, and the design of technology, Bazerman argued that Edison and his team had to accommodate their new technology to the beliefs and values of the time, but in the process of disseminating the technology, new values and discourse communities emerged. Edison’s story reflects both the tenets of SCT regarding the creation of rhetorical communities and the reflexive nature of materiality and symbolicity. The story of light was shared in newspapers across the nation, but power and light also generated new types of texts, such as instruction manuals and “created new discourse networks with new sets of meanings. (For example, electrical engineering became a significant professional and educational network in the United States only with the generation of electricity, which brought with it all the other forms of applied electronics.)”⁷¹ The story of communication and symbols that surrounded Edison’s light parallels the story I will tell about Apple’s personal computer. As with light, the personal computer “had to emerge as part of the drama of human meanings.”⁷² Drama was at the center of a technological development

supporting the ontological assumption of SCT: humans are natural born storytellers. In line with Bazerman's conclusion, my analysis demonstrates that:

[f]or any technology to succeed (that is, to establish an enduring place within the world of human activities), it must not only succeed materially (that is, produce specified and reliably repeatable transformations of matter and energy); it must also succeed symbolically (that is, adopt significant and stable meanings within germane discourse systems in which the technology is identified, given value, and made the object of human attention and action).⁷³

Technology must be useful and user-friendly as well as significant and valued. When successful, new technology also creates new ideas and possibilities, and thus, I argue, along with other scholars, that technology can transform rhetoric by reshaping *ethos*.

Alongside a materialist conception of rhetoric, SCT provides the framework for understanding how computer culture has developed as a rhetorical community, and FTA along with the concept of *ethos* and dimensions of affect provide the concepts for identifying and understanding rhetoric at work. The following chapters will map the chaining out of computer culture fantasy themes from small hobbyist groups in Silicon Valley to the corporate culture of Apple Computer and from the internal communications of Apple to the American public. I work to reveal how fantasy themes coalesced to contribute to a Silicon Valley rhetorical vision of which Apple is representative.

Bormann described FTA as starting by "collecting evidence related to the manifest content of the communication, using video or audio tapes, manuscripts, recollections of participants, or . . . direct observations," in other words a diversity of texts.⁷⁴ In keeping with Bormann's outline, I rely upon a collage of texts to trace the development of Apple's personal computers. This approach is also in line with Michael McGee's idea of modern texts as "fragments."⁷⁵ McGee suggested that the "postmodern" condition dictates that no singular text can adequately capture the complete perspective on an issue worthy of critique, and therefore,

“our first job as professional consumers of discourse is inventing a text suitable for criticism.”⁷⁶

In line with SCT’s concern with small group dramatization, I have attempted to uncover primary and contemporaneous accounts of both Silicon Valley hobbyist groups and Apple throughout the time period covered (1964-1984) and to trace the fantasies transmitted by those accounts to public communication, including articles in popular publications and commercials. McGee was also concerned with the divorce of context from text: “Discourse ceases to be what it is whenever parts of it are taken ‘out of context.’ Failing to account for ‘context,’ or reducing ‘context’ to one or two of its parts, means quite simply that one is no longer dealing with discourse as it appears in the world.”⁷⁷ I address this concern by approaching both the Silicon Valley environment and personal computers, the object themselves, as a source of material influence. The result is a varied collection of texts, including newsletters, advertisements, corporate publications, magazine articles, biographies, autobiographies, blogs, interviews, and as mentioned, geography and machines.

Identifying these texts mirrored the chaining out of fantasy. Because small group communication is the starting place for symbolic convergence, I have privileged first-hand accounts written concurrently with the events in question and texts referenced by those first-hand accounts. When texts written during the same time period were not available, I drew from texts written by people who “were there,” such as Apple employees. If a book or magazine article was referenced in an account, I attempted to track it down. I also drew from texts that were identified as the “best” texts on the history of computing or Apple. Googling “best book about Apple,” may not appear scholarly, but I was concerned with finding texts that were popular with a large audience as those texts are most likely to chain out fantasy themes and contribute to a shared rhetorical vision. While taken independently, the array of texts may appear unfocused, the

diversity of perspectives strengthens an analysis grounded in an atmosphere of cultural heterogeneity. When viewed as a complete text created by me as a critic, the artifacts work to answer McGee's call to invent a text suitable for criticism, or in this instance, suitable for understanding the development and rhetorical implications of the personal computer and Silicon Valley.

In the second chapter, I touch upon the contemporary rhetorical vision of Silicon Valley as represented by scholarly and popular texts. The majority of the first chapter, however, is dedicated to examining how the fantasy type "Silicon Valley" and the fantasy themes shared in hobbyist computer clubs influenced the development of the computer in the 1970s. The fantasy themes that ultimately coalesced into the Silicon Valley rhetorical vision were popularized between 1964-1975. Focusing on that time period, the chapter addresses how Lévy's affective dimensions (topology, semiotics, axiology, energetics) contributed to the uptake of the themes. The texts examined include statements made by individuals active in the hobbyist groups along with the groups' newsletters, regional publications from the period, and historical accounts of the development of the personal computer. One such historical account is *The Little Kingdom* written by *TIME* reporter Michael Moritz in 1983. Today, Moritz is a Silicon Valley venture capitalist, but in the early 1980s Steve Jobs invited Moritz to document the early days of Apple. The result was *The Little Kingdom*, the first book about Apple Computer. The book appears in subsequent chapters as well. Because of Moritz's level of access to Apple employees, including Steve Jobs, I treat the book as a primary account of both Silicon Valley and Apple.

In chapter three, I narrow my focus to the first three rhetorically significant computers released by Apple—the Apple I, II and Macintosh—and analyze the internal discourse that inspired and shaped the machines.⁷⁸ I demonstrate how fantasy types of 1960s, specifically those

of the hobbyist computer clubs, chained out to the culture of Apple and became derivative dramas with their own unique Apple flavor. A key component of this transformation is the role of engineering and design in the creation of machines, and the rhetorical impact of the machines themselves. As in chapter two, when available, first-hand accounts are the texts examined, including the autobiography of Apple co-founder Steve Wozniak. *Folklore*, a blog written by Macintosh engineer and Apple employee number 435 Andy Hertzfeld, is a primary text as well. The blog was published as a book in 2011. In email correspondence, Hertzfeld explained:

In the fall of 1983, I wrote three pages of notes about the history of the Mac project but didn't do more until 1996, 13 years later, when I had the idea for a web-based system of interlinked anecdotes, and I used my notes from 1983 to come up with titles and summaries for about 100 stories. I finally had time to pursue it for real, starting in June 2003, when I wrote the first actual story, then wrote most of the stories by June 2004, when they had to be finished for the book.⁷⁹

Although both Wozniak's autobiography and *Folklore* were not completed until decades later, both meet Bormann's standard for FTA as a "recollections of participants."

Chapter four looks again at the Apple I, II and Macintosh, but the analysis focuses on public communication, including how the rhetoric associated with marketing and design influenced the American consumer. This chapter illustrates how fantasy themes go public and strengthen into a rhetorical vision. The process is energized by the advertising and public relation capabilities of a corporation. In addition to *The Little Kingdom*, *Folklore* and other historical accounts, this chapter addresses magazine and newspaper articles written about Apple Computer and their print and television advertisements. The central journalistic accounts that I analyze include *TIME* magazine's January 1983 "Machine of the Year" issue and a feature article from *Newsweek* published following the release of Macintosh.

Apple continues to have a powerful influence on American discourse today, but to adequately trace the development of fantasy themes, I start from the beginning. A complete

analysis of Apple’s discourse through today was beyond the scope of this thesis. However, in the concluding chapter, I return to a discussion of the implications of the Silicon Valley rhetorical vision as reflected by Apple and suggest directions for future research that could attend to contemporary concerns, including the implications of the role of the personal computer and Silicon Valley in public deliberation.

Table 1. Concepts of FTA⁸⁰

<i>Classes of rhetorical fantasy themes</i>
○ fantasy theme
○ fantasy type
○ saga
○ symbolic cue
<i>Elements of rhetorical fantasy themes</i>
○ stylistic qualities
○ substantive qualities
○ structural qualities
<i>Forms of rhetorical fantasy themes</i>
○ constructive
○ destructive
○ discursive
○ factious
○ fantastic
○ nonfiction
<i>Kinds of rhetorical fantasy themes</i>
○ consciousness-creating
○ consciousness-raising
○ consciousness-sustaining
<i>Kinds of sagas</i>
○ founders
○ genesis
○ latent/inactive
<i>Life-cycle of rhetorical visions</i>
○ consciousness-creating
○ consciousness-raising
○ consciousness-sustaining
○ consciousness-terminus
<i>Qualities of rhetorical fantasy themes</i>
○ pragmatic
○ righteous
○ social
<i>Rhetorical vision continua</i>
○ flexible to inflexible
○ intense to passive
○ paranoid to healthy
○ pure to mixed
○ secretive to proselytizing
<i>Strategies for sustaining rhetorical visions</i>
○ conservation
○ preservation
○ restoration

Chapter 2: The *Ethos* of Silicon Valley and the Origins of Personal Computer Fantasy Themes (1964-1975)

“Without computer clubs there would probably be no Apple computers.” -Steve Wozniak¹

Bormann wanted to understand why any group of people would invent the computer, and this thesis seeks to answer that question with the story of Silicon Valley and Apple Computer. To understand Apple, you must first understand the land from which the personal computer sprang, and to understand Silicon Valley, you must understand the personal computer. Their stories are intertwined. In this chapter, I examine Silicon Valley’s influence and reputation through articles about the region. Following the broad evaluation of Silicon Valley, I narrow my focus to the development of the personal computer and the role that the region played in its development. The development of the personal computer is analyzed from a broader cultural perspective, including an analysis of a 1972 article in *Rolling Stone* magazine about an early computer game, before returning to the role of the region. The region’s influence is well displayed in the discourse and publications of three hobbyist computer organization active during the late 60s and early 70s: The People’s Computer Club, Community Memory, and Homebrew Computer Club. The chapter closes with a fantasy theme analysis of these organizations and their newsletters. I contend that a Silicon Valley rhetorical vision and the resultant *ethos* compelled the invention of the personal computer. Tracing the influence of “Silicon Valley” in the 60s and 70s provides groundwork for understanding the continuing influence of the region today.

The region surrounding the southern reach of the San Francisco Bay has been investigated and imitated as scholars and communities worldwide try to understand how the once sleepy agricultural community transformed into a “leading edge industrial economy” known for its technological innovation.² The story of Silicon Valley exceptionalism is in itself a fantasy

theme, a story about a region capable of producing unrivaled innovation both in the past and in the future. Not until the 1970s was the phrase “Silicon Valley” used to refer to the region south of San Francisco, and even today, it has no geographic demarcations. Instead, “Silicon Valley” functions as a rhetorical vision, a phrase that symbolizes more a particular narrative than a region with defined boundaries. As a rhetorical vision, “Silicon Valley” is equal parts fantasy themes and reality. Through the many stories, or fantasy themes, told about Silicon Valley, the region has contributed to a rhetorical vision, which carries with it acceptable values, or an *ethos*. These stories have been supported, perhaps even provoked, by material resources, such as venture capital and electronics warehouses. There are several theories regarding the success stories of Silicon Valley success, but unlocking the formula to economic development is not my primary concern. I am interested in revealing how the fantasy themes of Silicon Valley contributed to the actualization of the personal computer, and in turn, how those fantasy themes combined to create a rhetorical vision.

Like the stories of Detroit and the automotive industry, many explanations have been offered for what makes Silicon Valley exceptional for the technology industry.³ My contention is twofold. First, Silicon Valley is equal parts fantasy theme and materiality, and second, the actualization of exceptional technological success cannot be attributed to any one factor. The fantasy themes of the region acted reflexively with an assemblage of influences symbolic and material to create “Silicon Valley.” Silicon Valley structures the *ethos* of local rhetorical communities in such a way as to hasten the development of technology. A cultural expectation regarding technological innovation is circulated through networks of people and texts and reinforced by material dimensions of the region, such as easy access to computer parts.

The fantasy themes of the region are shaped by Lévy's four affective dimensions. First, the region is a space populated by personal connections, material resources, and physical markers, or in other words, a *topology* conducive to technology endeavors. Second, the region shares symbolic resources, or fantasies, disseminated by texts such as newsletters; it is *semiotic*. Third, the region has a set of values or *axiology*, and finally, within the region, certain narratives have been enhanced or diminished over time demonstrating the role of *energies*. For example, whenever a company from the region completes its initial public offering (IPO), the event generates renewed interest in Silicon Valley narratives. The stories and language of hobbyist and trade organizations and their contributors offer compelling evidence of these dimensions at play. As discussed in chapter one, Lévy's taxonomy is not intended to be exhaustive. Instead, I employ the taxonomy as a useful way to analyze affect and emergence. The affective dimensions are present on both a macro and micro level, or in this instance, across a region, within hobbyist groups, and within individuals. The embodiment of cultural possibilities is shaped by these four dimensions, and thus, each dimension contributes to an environment that privileges particular fantasy themes, and in turn, values. Language works reflexively, both creating and capturing these values.

The topology of Silicon Valley provides the material and symbolic resources necessary for technological innovation. Journalist David A. Kaplan speculates that the same spirit that drove the California gold rush contributed to the success of Silicon Valley.⁴ The geography is infused with the rhetorical circulation of riches. California symbolizes "striking gold" for many who head West. In his book on the early years of Apple, *The Little Kingdom*, venture capitalist and former journalist Michael Moritz provided an apt depiction of the influence of topology. Moritz described in detail the long list of local electronic stores that supplied the "resistors,

capacitors, and transistors” used in the first Apple computers. The largest of the stores was the block-long Haltek where one visitor told Moritz that walking around the aisles “was like walking around an immense tool kit. It gave you an idea of what was possible.”⁵ Physical proximity to electronic parts generated possibilities henceforth unknown. Because of the store, the visitor was able to imagine a future in which he could create the next disruptive technological innovation. He could craft a fantasy theme in which he starred as a Silicon Valley inventor. Moritz fully developed the idea of topological advantages in the following passage:

The founders and managers of these companies were fond of saying that there was nothing they might need that wasn't within an hour's drive. There were lawyers to draw up incorporation papers, venture capitalists to provide money, contractors to lay foundations, interior designers to decorate offices, accountants to check the books, distributors who stocked parts, job shops to perform tedious chores, public-relations agencies to court the press, and underwriters to prepare stock offerings. Many of these men had grown up in the semiconductor industry. They hopped between companies . . . They were mobile reservoirs of experience who knew whom to trust and steered business toward one another. . . . All these men worked or invested in companies whose products eventually trickled down to Haltek and Halted . . .⁶

The passage exemplifies what Lévy characterized as a “connectivity or ‘space’ undergoing constant transformation, consisting of associations, links, paths, etc.,” a topology that created the potential for technological entrepreneurship, including the dissemination of objects (the parts at electronics stores such as Haltek) ripe with traces of this potential.⁷ Note, whether or not these resources were “real” was not necessarily important because, as Moritz shared, the “founders and managers . . . were fond of saying” that the resources existed, and thus, the discourse of company executives contributed to the fantasy theme that Silicon Valley supported entrepreneurs. These associations were reinforced by material resources, such as government spending on defense research and Stanford University, a hub for tech research and business development since the founding of Hewlett-Packard in the 1930s.⁸

Yet, government spending and the influence of a research university are not unique to Silicon Valley. For example, MIT contributed to the growth of the Boston tech-sector along Route 128. In her book analyzing why Silicon Valley has flourished while Route 128 has waned, Anna Lee Saxenian, professor and current Dean of the University of California-Berkeley School of Information, concluded that the difference is organizational structure. Silicon Valley's decentralization, fluidity and multiplicity of institutions support rapid growth that cannot be created by Route 128's hierarchical industrial environment. Silicon Valley is energetic in a way that other regions are not; the region can disperse ideas and values more effectively. The region provides a network of people, organizations and companies that work to heighten and disperse information, including symbols and values, with an intensity and fluidity lacking elsewhere. Saxenian supported this conclusion. She noted that "collective learning," "social networks," "informal communication," and "collaborative practices" contribute to Silicon Valley's comparative advantages.⁹ These phrases suggest that the topology of Silicon Valley allows for greater communication across and within companies because the region is not constrained by hierarchical corporate structure. In turn, communication shapes a cultural expectation that contributes to unmatched success. Saxenian's conclusion is similar to Lee et al's that "the Silicon Valley edge stems from an entire environment, or habitat, honed for innovation and entrepreneurship."¹⁰ In other words, a particular combination of topology, semiotics, axiology and energetics foster the Silicon Valley *ethos*.

While increasingly understood by people around the world, the *ethos* of Silicon Valley is most influential amongst the innovators living in the region. The material and symbolic dimensions of Silicon Valley, in other words both the physical advantages provided by Silicon Valley and its influence as a rhetorical vision, compelled the creation of the personal computer

we know today. The first microcomputer, the Altair, was built by Micro Instrumentation Telemetry Systems (MITS) in Albuquerque in 1974, but its screenless façade with blinking lights and metal switches did not ignite an industry in New Mexico nor a national market for computers. New Mexico did not offer the symbolic and material resources to drive technological innovation. Note, there was an evolution in the term used for a computer owned by an individual from “microcomputer” to “personal computer,” and even the change in terminology was influenced by Silicon Valley. Set against the fantasy themes and material resources offered by Silicon Valley in the 1970s, it were as if a person of character was expected to build a machine that would outperform the Altair.¹¹ The region offered both the symbolic motivation and material resources necessary for the creation of a personal computer. In Silicon Valley, it was easy to understand what it would take to improve upon the Altair. The *ethos* of Silicon Valley beckoned for the creation of the personal computer. Indeed, Christoph Lécuyer, Professor of the History of Science and Technology at Université Pierre et Marie Curie, argued that “[t]he rise of Apple and the growth of the personal computer industry on the San Francisco Peninsula were not accidents.”¹²

The realization of the *ethos* is reflected in the development of the personal computer by engineers living in the region in the 1970s. The fantasies of Silicon Valley in the 60s and 70s contributed to an expectation to build a better, more personal computer. The result was an *ethos* in which technological innovation was revered. The personal computer became the object that catalyzed the technological potentialities latent in the fantasy themes of the time and place. What had been just a possibility became a real “thing” that both reinforced the rhetorical vision of Silicon Valley and provided a powerful marker for orienting discourse. With the development of the personal computer, “Silicon Valley” became more influential. The phrase “Silicon Valley”

also provided an influential signifier for the fantasies of the region. In the following section, I approach the region as a symbolic cue before turning to a more in-depth analysis of the region's computer hobbyist groups. To convey the implications of the symbol "Silicon Valley," I trace the phrase to its origins in the pages of the regional publication *Electronic News*.

In the American lexicon, "Silicon Valley" has become interchangeable with "technology." The metonymy of "Silicon Valley" for technological innovation reflects the region's dominance, both economically and symbolically, in the field of technology. In the language of FTA, the phrase has become a symbolic cue, a "shorthand indicant" that evokes themes of technological innovation and wealth associated with the region today. Some scholars have argued that the origins of the economic and technological success of the region should be traced back as far as 1909, but in Palo Alto a plaque at 367 Addison Avenue announces "The Birthplace of Silicon Valley" as the garage where William R. Hewlett and David Packard started their audio company in 1938.¹³ Even so, prior to the 1970s "Silicon Valley" did not exist in the public consciousness because no one had ever referred to the region as such. The etymology of the phrase suggests that the phrase itself is important to understanding the region's narrative. The invention of the phrase coincided with, and thus I argue contributed to, the public's awareness and economic success of the region. The symbolic cue provided the public with a referent that could capture the many fantasy themes originating in the region. The phrase "Silicon Valley" made it easier to talk about the region and to organize its stories. It functioned rhetorically to reinforce the values of entrepreneurship and innovation. Moreover, if you worked in Silicon Valley, the fantasies started to coalesce into cultural expectations relating to the development of technology.

Most chroniclers of the region accept that the phrase “Silicon Valley” was first used in print by Don Hoefler in 1971. Hoefler wrote a three-part series about the region for *Electronic News*. The publication was a weekly electronics trade newsletter started in 1957. Hoefler’s series focused “on the history of the semiconductor industry in the Bay Area” and touted itself as “a behind-the-scenes report of the men, money and litigation which spawned 23 companies—from the fledgling rebels of Shockley Transistor to the present day.”¹⁴ Semiconductors are most often made from silicon; hence Hoefler titled the series “Silicon Valley, U.S.A.” In the naming, Hoefler attended to the materiality of the region. In the first of the three articles, Hoefler wrote, “In him lies the genesis of the San Francisco silicon story.”¹⁵ This single sentence captured a saga, or origin story, for the entire region. It was a fantasy theme because it told the story of a single man contributing to the economic development of the entire region. Hoefler was referencing William Shockley, a “fledgling rebel” who won the Nobel Prize for inventing the transistor and who opened the first semiconductor firm in Santa Clara Valley in 1955. In an effort to capture the rapid growth of the semiconductor industry in the region south of San Francisco, Hoefler invented the phrase “Silicon Valley” and attached to it both a founding fantasy, or saga, for the region and the fantasy theme of a renegade founder of a technology company driven by the promise of fortune. With the retelling of the history of Shockley as the original rebel, Hoefler transmitted the anti-authoritarian value implicit in the narrative. It is a theme that motivates CEOs and entrepreneurs even today.

Hoefler’s articles in *Electronic News*, including the story of William Shockley, provide an example of Lévy’s four dimensions in action. Topologically, Shockley started his company in Mountain View to be closer to his mother and because he received financing from a California investor, which illustrates Lévy’s idea of connections.¹⁶ *Electronic News*, the publication that ran

Hoeffler's series on "Silicon Valley U.S.A.", worked semiotically to craft a shared language both about and for the "semiconductor industry" and "start-ups" and to share the fantasy of rebel entrepreneurs (Shockley) proliferating technology companies in the region. The publication also featured a "Semiconductor Family Tree" crafted by Hoeffler.¹⁷ The "Tree" made explicit the topological connections between companies. By highlighting how frequently employees left companies to start their own venture, the "Tree" also reinforced entrepreneurial values, thus illustrating Lévy's concept of axiology. Moritz captured the influence of *Electronic News* in the following passage:

The similar sounding names were familiar to any regular reader of *Electronic News* . . . Life behind the walls had a transitory flavor and the old seasonal rhythms of rural life had given way to a pattern associated with young companies that was almost biological. . . . [C]hroniclers of the electronics industry would patiently explain to newcomers how Fairchild Semiconductor begat Intel Corporation and National Semiconductor and how they, in turn, spawned other companies.¹⁸

The evolution was "almost biological;" the business evolution felt like a natural force. As alluded to by Moritz, *Electronic News* served to energize the themes of innovation and entrepreneurship in Silicon Valley with stories of great founders like William Shockley and the "Family Tree" of company names. Physical buildings with signs announcing the names of companies reinforced the stories shared in *Electronic News*. Perhaps, most importantly, by christening the region with the name "Silicon Valley" in *Electronic News*, Hoeffler created a powerful symbolic vehicle for reinforcing and spreading the narrative quickly. Semiotics reinforced topology, axiology, and energetics. Together these elements impressed upon individuals living in Silicon Valley a particular idea about potential actions they both could and should take; the dimensions contributed to an affective experience of possibility.

According to Martin Kenney, professor of Human and Community Development at University of California-Davis, Hoeffler's series combined with a 1974 article in *Fortune*

magazine entitled “California’s Great Breeding Ground For Industry” ensured that “[b]y 1975 Silicon Valley’s reputation had become fixed in the public imagination.”¹⁹ A search of ProQuest national newspapers expanded database supports the conclusion that “Silicon Valley” grew in public awareness starting in 1975. A search for the term “Silicon Valley” in 1974 returned zero results; in 1975, two results, both from the *New York Times*, in 1976, twelve results total from the *New York Times*, *Chicago Tribune*, and *Los Angeles Times*. The same search for the year 1980 returned 171 results in national U.S. newspapers. A “reputation . . . fixed in the public imagination” is an apt description of a rhetorical vision, and the rhetorical vision of “Silicon Valley,” as reflected in the fantasy themes of founders like Shockley, reinforced the values of technological innovation and entrepreneurial success. The *Fortune* article propagated the perception of the region as a “center of innovative technology like no place else in the world” and told the stories of Silicon Valley personalities. The subtitle “An empire from a garage shop” referenced the “modest garage shop” that “gave birth to the Hewlett-Packard Co., which is today one of the world’s largest producers” of electronics equipment.²⁰ As demonstrated by the article, the story of William Hewlett and David Packard was another popular Silicon Valley saga. The garage startup story is repeated throughout the history of Silicon Valley; it has become a fantasy type, or stock scenario, to explain the origins of Silicon Valley companies, even when it is not accurate.

From Shockley to Hewlett and Packard, Silicon Valley has many stories, but the story of the personal computer is noteworthy because it resulted in a computing machine that the average American could own. Because of this, the personal computer was instrumental in chaining out the fantasy themes of the region; its materiality reinforced and spread fantasy. For engineers living in the region, the personal computer was proof of the technological edge of the region.

Starting in the 1970s, hobbyist clubs influenced the design and marketing of the personal computer, and hobbyist discourse reveals numerous fantasy themes. Hobbyists and their organizations told stories about themselves, the government, and corporate computer companies, notably IBM, that revealed the values latent in their devotion to the computer. The following analysis explores values reflected in the fantasy themes of three hobbyist organizations: People's Computer Company, Community Memory, Homebrew Computer Club. The recollections of people who participated in these hobbyist organizations and the organizations' publications reveal four fantasy types. Personal computers are (1) possible, (2) revolutionary, (3) democratizing, and (4) necessary. The following section explores these fantasies as developed and intensified around computers, as with hobbyist groups, and through computers, as with video games. Given the personal computer's role in connecting the public to Silicon Valley, I contend that the values of the personal computer became values inherent in a Silicon Valley *ethos*. First, I provide a brief overview of the history of the personal computer.

Personal computers faced resistance both material and rhetorical. Computers were too expensive and too large for a consumer to own. Computers were inaccessible, and people did not think it was possible to engineer a smaller machine. Even those in the mainframe computer industry considered a personal computer like the Apple II a pipedream.²¹ As Eddie Curry, the executive vice president of the first microcomputer company MITS, explained, “[T]he idea that you could own a computer, your own computer, was about as wild as the idea today of owning your own nuclear submarine. It was beyond comprehension.”²² Mainframe computers existed, and therefore, the power of a computer was understood, but the idea of computer ownership was unrealistic for individuals. Few people were sharing fantasy themes about individuals owning computers. As suggested by Hoefler in his “Silicon Valley U.S.A.” series, computer ownership

came closer to actualization with the invention of the transistor, a specialized semiconductor. Transistors made it possible to create a microprocessor, which in the simplest of terms is an artful arrangement of transistors. A microprocessor was the key to building smaller computers, or personal computers, because it was capable of executing the key functions of a computer from a small chip. Transistors and microprocessors were precursor objects that enabled the actualization of the personal computer.

Prior to the 1970s, or before the microprocessor, computers were only owned by bureaucratic, power-wielding institutions for a simple reason: computers were big and expensive. Because they were big and expensive, computers had limited and guarded access. Even the people who wrote computer programs were not allowed to access computers directly. Programmers would drop off code to a white-coated technician and come back later to see if the program had worked. In the minds of technology enthusiasts of the 70s, computers were associated with institutionalized power and authority. The dominant fantasy themes featured corporate or military bureaucrats using computers for less than ideal outcomes, such as economic exploits and war. This association was articulated by Ted Nelson, an author known for his philosophical approach to computers and technology, in his 1974 book *Computer Lib*. An opening section of the book was titled “The Computer Priesthood,” and Nelson explained, “Computers are very special, and we have to deal with them everywhere, and this effectively gives the computer priesthood a stranglehold on the operation of all large organizations of government bureaux, and anything else that they run.”²³ Nelson shared a fantasy theme that featured “priests” monopolizing computer power. The “priests” referred to the technicians who operated the computers, and they were often the target of computer enthusiasts’ scorn. Use of the word “priest” was widespread in the hobbyist literature of the time. It came to function as a

fantasy type that implied a corporate or military bureaucrat abusing computer power. Nelson critiqued the specialized access of “priests” to computers, and as this quote from Robert Townsend, a business executive known for his tenure as president of Avis in the late 60s, demonstrated, Nelson and computer enthusiasts were not alone: “They’re trying to make it look tough. Not easy. They’re building a mystique, a priesthood, their own mumbo-jumbo ritual to keep you from knowing what they—and you—are doing.”²⁴ Here again was a fantasy theme starring a priest working to obscure computers against your best interest, but this theme was being shared by a business executive. The priests were again the villains of the drama. The priest fantasy type suggested that the desire for a personal computer was a desire to be free from authority and rules. Computer programmers *and* business executives no longer wanted to be “locked out of the machine room.”²⁵ Institutional rules and authorities were not trusted by those on the forefront of personal computers, and the revolutionary perspective would both energize a movement and contribute to anti-authoritarian values. “Computers for the people,” would become a rallying cry for some computer activists, and IBM would become another emblematic villain because their mainframe computers were most often used by corporations and government institutions.

One institution did offer somewhat unrestricted access to computers— universities. In *Hackers*, author Steven Levy portrayed MIT as the birthplace of hacking. To be clear, the hacking at MIT was not the credit card-stealing, security-breaching antics we consider hacking today. Instead, hacking started as a group of MIT students with a shared interest in electronics pursuing what they considered a noble endeavor. The students first met in the Tech Model Railroad Club (TMRC) to solve electrical engineering quandaries and ended up in a ninth-floor computer lab in the wee hours of the morning (the only time when the computer had open time

slots) to solve computer programming problems.²⁶ For these students, hacking was developing innovative solutions to engineering problems. According to Levy, the MIT ninth-floor computer lab was where the first values of computer culture, which he called hacking, were forged.

“Something new was coalescing around the [computer]: a new way of life with a philosophy, an ethic, and a dream.”²⁷ Levy recognized the power of the computer as an object to contribute to an *ethos*. The computer functioned as an object that impressed upon its users henceforth unknown possibilities; the computer structured actions and performed functions in a new way that were lived and experienced by programmers. A computer allowed individuals to craft new fantasy themes about what they could do in the future.

The influence of computers was intensified by games. Games enable fantasy themes that unfold in virtual environments. The affective experience of games has been connected to the rise of the personal computer since the MIT crew started hacking on the ninth floor. In fact, the original opiate of the gaming masses was authored by a MIT programmer in 1962: “Spacewar.” A testament to the game’s power was published in *Rolling Stone* on December 7, 1972: “Spacewar: Fanatic Life and Symbolic Death Among the Computer Bums.” “Bums” was a reference to people who became so engrossed in computer games that they accomplished little else; it reflected an intense connection with computers. Written by the founder of the *Whole Earth Catalog* Stewart Brand, the article followed the exploits of several computer programmers in an attempt to explain the development of the personal computer.²⁸ Brand concluded:

The trend owes its health to an odd array of influences: The youthful fervor and firm dis-Establishmentarianism of the freaks who design computer science; an astonishingly enlightened research program from the very top of the Defense Department; an unexpected market-Banking movement by the manufacturers of small calculating machines, and an irrepressible midnight phenomenon known as Spacewar.²⁹

Here among the many influences driving the development of a smaller computer was a video game. The game involved manipulating a spaceship to shoot down other spaceships. Playing the game allowed the user to experience a fantasy theme from the pilot's chair of a rocket. It was multiplayer and had several variables that a player could direct. In describing the creation of "Spacewar," Levy recounted that Slug Russell, the creator, was driven by "the feeling of power you got from running" computers, an experience that was heightened by the control allowed by the game.³⁰ Whether it was because of the power or some other sensation, when Brand reported on the game phenomena in 1972, he observed that "hundreds of computer technicians are effectively out of their bodies, locked in life-or-death space combat computer-projected onto cathode ray tube display screens, for hours at a time, ruining their eyes, numbing their fingers in frenzied mashing of control buttons, joyously slaying their friend and wasting their employers' valuable computer time."³¹ Brand suggested that the experience was more than virtual; players were "locked in life-or-death space combat" that resulted in actual physical deterioration, such as ruined eyes and numb fingers. In other words, computers engaged and consumed the body in an immersive fantasy theme. A fantasy theme is a story that does not involve the here and now, so to the extent that the player was experiencing a virtual reality, she was enacting a fantasy. The affective engulfment reflected by "Spacewar" illustrated why games would become a motivation for computer development. For many computer MIT programmers, the desire to engage with a gaming environment motivated them to build better, faster machines. In the late 60s, however, the government cut off funds for MIT computer research not directly connected to the military efforts of the Advanced Research Projects Agency (ARPA).³² Because they did not want their efforts dedicated to the continued militarization of the computer, many of the ninth-floor hackers left MIT, and the center of computer research and development shifted to California.

However, as Levy quipped, perhaps “[i]t was inevitable that computers would come to ‘the people’ in Berkeley.”³³ This sentiment reflected the influence that the California environment had on the personal computer. The region provided the ideal affective framework—topology, semiotics, axiology, and energetics—for transmitting the personal computer fantasy. The empirical problem-solving of MIT fused with activist community-building of Berkeley. Silicon Valley culture was intimately connected to the free-spirited environment of 1960s San Francisco. Not to be cliché, but timing was everything. San Francisco in the 1960s furnished an ample reserve of both energy and values for the development of the personal computer. Jim Warren, creator of the first West coast computer trade show Computer Faire, said that the early computer culture of Silicon Valley “had its genetic coding in the 60s, in the anti-establishment, anti-war, pro-freedom, anti-discipline attitudes.”³⁴ These anti-authority, pro-democracy values were transmitted by fantasy themes and adopted by computer hobbyists.

Some of this “genetic coding” was grounded in the Free Speech Movement (FSM), a student protest at the University of California at Berkeley in response to a September 1964 decision to eliminate a free speech area on campus. This movement also spoke out against authoritative bureaucracy as evidenced by a letter written by now-journalist Margot Adler as a student to her mother in December of 1964: “There is anger at being only an IBM card, anger at the bureaucracy, at the money going to technology.”³⁵ Even though Adler was a political, not computer, science major, she drew a connection between bureaucracy and technology, which suggested that in 1964 technology was widely associated with oppression, and IBM was often a villain of the fantasy theme. Another undergraduate at the time, Jeff Lustig, later a professor of government at California State University, Sacramento, provided a fuller context for both the energetic and axiological dimensions of the time:

Things did change after 1964. The social context in which the FSM had arisen, with its distinctive mix of innocence and passion, disappeared. The increasing ferocity of the war, stunning failure of constitutional remedies, and escalating penalties for dissent destroyed the moral and political ecology of the early years. The civility many have noted could hardly survive when the authorities themselves broke the rules in murderous response to exploding ghettos at home and the Vietnamese abroad. The stakes of the game changed. Most activists, learning in the process, changed with them. That they would do so was determined not by a confusion of “strategy and identity” but by their sustained belief that action, in the context of community, was still the test of political commitment.³⁶

The elimination of the free speech area in 1964, which was symbolic of the suppression of dissent, and the accompanying social context of the war in Vietnam and race riots of the 60s, energized Berkeley activists and valorized a commitment to community action. The context reshaped the stories that the activist community could tell about itself and the government. The passage implied that the values had changed; the movement had been intensified. Lustig concluded that the FSM “promised aspects of an outsider’s politics and something beyond the insider game.”³⁷

While several California hackers shared this outsider’s political commitment, the connection between computer culture and activism is best exemplified by a Berkeley student involved in the FSM, Lee Felsenstein. Felsenstein was directly involved in two grassroots computer organizations, Community Memory and the Homebrew Computer Club. Along with the People’s Computer Company, these organizations were rhetorical communities, groups that shared fantasy themes that shaped the development of the PC. Even their names reflected their values. The organizations spread the word that authority must be questioned and that computers offered a fun and easy way to lead the revolution. The impetus for many of the leaps and bounds made in both the marketing and building of personal computers can be traced to these hobbyist groups of Silicon Valley. The hobbyist groups provided small group connections integral to the development of fantasy themes, and the groups also functioned as a network that spread and amplified the fantasy themes. Topology supported the rapid spread and uptake of fantasy themes

because the regional density of hobbyist groups strengthened a network of connections that supported work related to the personal computer. The existence of multiple groups reinforced the value of computing.

In 1972, Felsenstein could occasionally be found on Wednesdays at the People's Computer Company (PCC) potluck, a meeting place for "computer counterculturists."³⁸ PCC was founded by Bob Albrecht, a former applications analyst for Control Data Corporation, a mainframe computer company. After developing a high school class on computer programming, Albrecht devoted himself to spreading computer education. To amplify his efforts, he started PCC in October of 1972. PCC was at first a publication, not a company, and its primary fantasy theme was quite simply that everyone, not just the authorities, could and should use computers. The publication reflected the fantasy type that computers were democratic in nature. The name "People's Computer Company" reflected the fantasy themes that computers were easy enough for everyone and the revolutionary "power to the people" spirit of hobbyists; these messages created an ironic, intentional tension with the "company" designation. The cover of the first edition, published in October 1972, proclaimed: "Computers are mostly used against people instead of for people, used to control people instead of to free them, time to change all of that—we need a People's Computer Company."³⁹ It was a fantasy theme the depicted PCC as challenging the powers who were controlling computers, and in turn, people. PCC was heroic. The theme of noble protest continued throughout the newsletter. One page featured a drawing of protesters carrying signs. On the front line a construction worker carried a sign claiming, "Basic Is The People's Language," and in the back row another sign demanded, "No More Fortran." Fortran was a target because it was a language invented by IBM. Again, IBM was the villain. The newsletter's language and illustrations were a reflection of a populist fantasy theme that

portrayed working class folks, complete with a protest aesthetic of picketing, rooted in and against the dominant programming languages of the time.

In support of these messages, the publication was dedicated to computer education. Alongside the theme of protest, the PCC attempted to educate its audience about computers both through its literature and the establishment of a computer center. The newspaper was “about having fun with computers and learning how to use computers and how to buy a minicomputer for yourself or your school.” Each edition had a page dedicated to new books and films about computers. Through education, PCC worked to increase the likelihood that an individual would use, or at least could imagine using, a computer. Education was an avenue to fantasy. A key element of education was hands-on experience as evidenced by the following quotes:

Note: We believe books about computers are best introduced to students or budding computer freaks after they have had some hands-on contact with the Modern Technological Marvel itself.

Education is real life experience. Experience processed through verbalization and created or reproducible images have their place in education, but only as auxiliaries to direct experience.⁴⁰

A dedication to “hands-on” access reflected the democratic fantasy of bringing computers to the people. The use of the word “freak” to describe people interested in computers was common at the time. The word may be a reflection of the influence of New Journalism, a hyperbolic and unconventional journalistic style popular in the 60s and 70s à la Hunter S. Thompson and Tom Wolfe. The style often employed alliteration, made up words and over-the-top descriptions. However, “freak” also captured the affective intensity generated by computers; the term was an energetic marker. Such energy coupled with a belief in the power of experiential learning culminated in the development of a PCC computer center offering computer classes and access to a computer for fifty cents an hour.⁴¹ The values of democracy and education reflected in the

publication materialized in the computer center. The center provided the public with the opportunity to experience a computer one-on-one. As retold in *Hackers*, after a couple of days at the center a reporter writing about PCC said, “I still have nothing to tell an editor beyond that I spent a total of twenty-eight hours so far just playing games on these seductive machines,”⁴² another *Spacewar* bum perhaps. Here again, the fantasy world of computer games reinforced a desire to engage with a personal computer.

While efforts to bring computers to the people may appear antithetical to the mistrust of technology, it was the mistrust of mainframe computer companies like IBM that inspired hacker activists to bring computers to the people. Power had to be wrested from the IBM “priests.” Another computer activist group, Community Memory, installed public computer terminals in Berkeley storefronts to allow people to post messages and connect with each other; its aim to connect people was topological in spirit. At the heart of their mission was a fantasy that computers could facilitate connections that would make a community a better place to live. Their name captured a grassroots desire to create a group of individuals who could share something that would be uninfluenced by the government or corporations. As a depository of stories, information, values and language, memory is affectively charged; and the work of Community Memory tapped the potential. As the head of Community Memory’s hardware development, Lee Felsenstein helped to install the first terminal in a Berkeley music shop in August of 1973. The idea was simple. Using the commands ADD or FIND, users either added resources that could be shared or looked for something that they needed. For example, a user who wanted to find good bagels could enter “FIND BAGELS,” and the terminal would return three retail outlets and a gentleman’s phone number who would teach the user how to make bagels.⁴³ By empowering people to connect through a computer terminal in a music shop, Community Memory hoped to

demonstrate the humane and revolutionary dimension of computers. The terminal showed first-hand how computers could bring people together through communication. Eventually, people started posting words of inspiration and revolution. A flier described the terminal as “a communication system which allows people to make contact with each other on the basis of mutually expressed interests, without having to cede judgment to third parties.”⁴⁴ “Third parties” was a veiled reference to the government and corporations. The terminal was anti-authoritarian, hands-on and created a community that experienced computers as empowering and easy to use. For Felsenstein, people’s creative manipulation and use of the terminal was “an epiphany, an eye-opener. It was like my experience with the Free Speech Movement and People’s Park. My God! I didn’t know people could *do* this!”⁴⁵ Felsenstein drew a direct connection with the spirit of the Free Speech Movement and his work with computers. The point may seem obvious to twenty-first century readers, but prior to the terminal, people could *not* have done what they were doing; the terminal created a new potential of human communication and computers. Funding ran out, however, and in 1975, Community Memory shuttered their terminal.

Following the Community Memory project, Felsenstein became an influential moderator of the Homebrew Computer Club, another hobbyist group instrumental in the development of the PC. Homebrew, a moniker that reflected that computers were easy enough to whip up in the garage, was originally founded by Fred Moore and Gordon French. Moore had been inspired to start the hardware hobbyist group when Albrecht denied his request to host hardware classes at the PCC community center.⁴⁶ Moore, like many computer hobbyists, was also motivated by a distrust of IBM: “There was no reason for computers to be as expensive as IBM’s machines. I was just trying to promote the exchange of information on microcomputers.”⁴⁷ His language demonstrated the power of the anti-priesthood fantasy, exemplified most often by IBM, to

motivate action. The action was realized with the first meeting of Homebrew in March of 1975 in French's Menlo Park garage. In attendance were several people who would become well-known in the history of computers. According to Doug Henton, chairman and CEO of Coecon and former assistant director of SRI International's Center for Economic Competitiveness, "Young talent meeting at the Homebrew Computer Club eventually gave birth to more than twenty computer companies, including Apple."⁴⁸ Steve Wozniak, co-founder of Apple, recognizes the influence of Homebrew in his retelling of the Apple story as well.

Unlike PCC or Community Memory, The Homebrew Computer Club was a consciousness-raising group for *hardware* enthusiasts.⁴⁹ It was unique in its focus on assembling machines. Homebrew fantasy themes were about individuals, most often those in the club, designing machines that would allow more people to own computers. The people who attended wanted to solder circuit-boards and program even if it meant tireless flipping of switches just to add 6+2.⁵⁰ One such enthusiast, Steve Dompier, allegedly spent close to 40 hours assembling his Altair (the first PC) just to complete basic addition, which he was only able to do "by mentally translating the code of the flashing LEDs out of their octal form and into a regular decimal number." The obvious question: why wouldn't you simply do the math in your head or on a calculator? Early Altair owner and Homebrew member Harry Garland explains, "For an engineer who appreciates computers, that was an exciting event . . . [Y]ou might have a hard time explaining to an outsider why it was exciting."⁵¹ Because every advance in computing ability brought the fantasy theme of computer ownership closer to reality, hardware hobbyists were willing to dedicate hours to create a machine that executed even mundane addition. Hardware engineers were influenced by an *ethos* that caused them to value the ability to build functioning computers regardless of how small the feat accomplished by the finished product.

For engineers, computer building was a visceral experience nourished by “exciting” emotional highs. The satisfaction of a functioning machine was energetic; it reinforced the idea that a true personal computer was possible and demonstrated that engineering prowess was to be valued. Dedicating long hours to building computers became integral to the axiology of hobbyists, and the axiology was reinforced at Homebrew meetings. Marshalling the highs at Homebrew was Felsenstein. He created a structure for Homebrew meetings that maximized opportunities for dramatization.⁵² Each meeting included three main areas of discussion: a demonstration section during which someone would share a new product or showcase a system they had built, a “mapping” section during which people in attendance would share what they were working on or questions they had, and a “random access” section when people could connect with each other to talk about issues that had been raised during the mapping section.

At the heart of the meeting were small groups communicating and sharing hardware fantasies and know-how, but by creating the structure that facilitated small group interaction and setting the tone of the gathering, Felsenstein’s role was important. Steve Wozniak, co-founder of Apple recalls, “Our leader, Lee Felsenstein, who later designed the Osborne computer, would get up at every meeting and announce the convening of ‘the Homebrew Computer Club which does not exist’ and everyone would applaud happily.”⁵³ The phrase captured a distrust of formal organizations, and the applause reflected the hearty acceptance of the sentiment. The fantasy theme of Homebrew members being involved in an anti-authoritarian pursuit chained out to individual members. The applause was a dramatization of an anti-authoritarian theme.

The first Homebrew newsletter reflected the open spirit of the meetings. The opening recounted the announcement that had promoted the first gathering and then shared the outcome:

*Are you building your own computer? Terminal? TV Typewriter? I/O device?
Or some other, digital black-magic box?*

*Or are you buying time on time-sharing service?
If so, you might like to come to a gathering of people with likeminded interests.
Exchange information, swap ideas, talk shop, help work on a project, whatever...*

This simple announcement brought 32 enthusiastic people together March 5th at Gordon's [Homebrew founder, Gordon French] garage. We arrived from all over the Bay Area—Berkeley to Los Gatos. After a quick round of introductions, the questions, comments, reports, info on supply sources, etc., poured forth in a spontaneous spirit of sharing.⁵⁴

The flier had shared a fantasy theme featuring a group of likeminded people building computers, and it had resonated with 32 people as evidenced by the “spontaneous spirit” of the meeting. Sharing, which could be considered the antithesis of exclusionary authority, was the guiding ethic of Homebrew. Wozniak explains, “The theme of the club was ‘Give to help others.’”⁵⁵ The first newsletter recounted how this spirit of giving emerged at the end of the first meeting, reporting, “Marty held up an 8008 chip, asked who could use it, and gave it away!”⁵⁶ This fantasy theme, a story about Marty sharing in the past, captured the central value of open access. The value was incorporated directly into the newsletter via a directory of people and what they had to offer. In the second edition printed on April 12, 1975, Steve Wozniak is listed: “. . . Have my own version of Pong, a video game called Breakthrough, a NRZI reader for cassettes very simple! Working on a 17 chip TV chess display . . . Skills: digital design, interfacing, I/O devices, short on time, have schematics.” He could be reached at 255-6666.⁵⁷ Open access and sharing were core values that were democratic in their tenor.

In addition to the directory, Homebrew newsletters included tutorials on everything from writing programs to building a monitor. Fundamentally, Homebrew was about enabling individuals to build a computer, and the newsletters suggested that it was easy: “The assumption is we are all learners and doers. Right?”⁵⁸ Homebrew members told stories about themselves that demonstrated they were hands-on and activist in their approach to computers. Another newsletter

chided, “Here’s your chance: implement your dream, no more excuses!”⁵⁹ It was an American can-do spirit rife with optimism.

Homebrew members also shared fantasy themes that featured the general public using computers. A regular attendee wrote in to say “Computers are not magic. And it is important for the general public to begin to understand the limits of these machines and that humans are responsible for the programming.”⁶⁰ The machine was a dream, but it was not so complicated as to be only accessible by a magician. Humans were in control, so there was no need to be afraid. The sharing, tutorials and antiestablishment spirit worked to empower small groups of people to build machines that were being denied to them by corporations. It was a revolutionary spirit as evidenced by Wozniak’s words:

Back then, the small computer scene was based on the belief that we were all on top of a revolution. Everyone attending the club in 1975-76 knew there was a big computer revolution occurring and the rest of the world wasn't aware of it yet. That's why there was so much excitement and spirit. We were finally going to get control of our own computers. . . . We managed to bring the computer revolution home.

What is more energizing than to believe you are leading a revolution? Wozniak himself became motivated by Homebrew to build a computer. He reflects the fantasy theme of wresting information and power from the computer technicians of governments and corporations shared by PCC, Community Memory, and Homebrew. The hobbyist groups in conjunction with their publications contributed to an *ethos* that was raising the expectation to create a PC for the everyday person.

Apple Computer would be the first to fulfill the expectation created by Silicon Valley and reinforced by Homebrew and the other hobbyist groups. The first demo of the Apple I and II happened at Homebrew meetings, and what was probably one of the first advertisements for the Apple II ran in the February 1977 Homebrew newsletter:

The Apple-II consists of a 6502 microprocessor, video display electronics including color graphics, RAM, ROM, ASCII keyboard port etc. all on a single PC board. If you order now, delivery is expected no later than April 30, 1977.⁶¹

Technical in its description, the ad demonstrates that this audience was expected to know how a computer worked. In his autobiography, Wozniak explained of the Homebrew crew: “These people had the same dream I had—to learn how to build a computer everyone could afford and use. These were my kind of people.”⁶² He claimed the Apple I and II “were being put together to show off at a computer club.”⁶³ Wozniak framed the club as motivating the development of the Apple I and II.

Here is an individual who provides an answer to Bormann’s question, why would someone build a computer? Wozniak demonstrates the central argument of this chapter— Silicon Valley worked symbolically and materially to motivate the development of the personal computer. Granted, Wozniak is one individual, but he is credited with designing the Apple II, a computer that is viewed by many as the first great PC.⁶⁴ Today, Apple is the most valuable company in the world, an emblem of Silicon Valley success. Placed in the historical and symbolic context of Silicon Valley, Wozniak is revealed as a hacker motivated by the fantasy themes of computers, their associated values, and the available material resources. Wozniak came to believe that computers were possible, revolutionary, democratizing, and necessary. The fantasies were fueled by affective connections with a community of like-minded people, a region ripe with an *ethos* that expected technological innovation, and the pure physical enjoyment of building and gaming. With the promise of a revolution and the compulsion of emotion, building a computer became a necessary outcome for Wozniak. Fantasy themes both motivated and constrained Wozniak.

Chapter 3: Personal Computer Fantasy Themes Go Corporate (1976-1984)

From the creation of ENIAC in 1946 until 1976, computers were the exclusive tools of the government and corporations. A personal computer was Steve Wozniak's dream. A dedicated and skilled hobbyist, like Wozniak, could spend endless hours soldering together a computer, but even after hundreds of painstaking hours, the hobbyist computer of 1976 could accomplish little. Yet, hobbyists had persisted, and upon encountering their progress and fantasies, Wozniak became motivated to build his dream machine. In this chapter, I follow the chaining out of the fantasies of the personal computer from computer hobbyists to the founding years of Apple Computer. This chapter turns to accounts of Apple's early years from its founders and employees, primarily Wozniak, Jobs, and software engineer Andy Hertzfeld. Some accounts are taken from *Design Crazy*, a book that features interviews with more than fifty former Apple employees. Collecting fragmentary texts from those who were there between 1976 and 1984 reveals that the same fantasies that motivated People's Computer Company, Community Memory, and Homebrew, motivated Apple founders Steve Wozniak and Steve Jobs along with early Apple employees. At Apple, the Silicon Valley fantasy types were reinforced, but Apple also contributed a new fantasy to the vision, a commitment to design. A commitment to design was the fantasy that ensured that the personal computer would ultimately go public, but first, the computer had to create a company. As the subject of the previous sentence suggests, a primary concern of this chapter is understanding how an object can motivate action, or in other words, how the material functions rhetorically.

Computers could have remained isolated, guarded by elite organizations or understood only by enthusiasts, but today 73% of U.S. households own a computer.¹ The development and

distribution of the personal computer was not a forgone conclusion. Instead, its realization, aided by fantasy, was revolutionary, or at least that is the story told by those who made the personal computer a reality. For example, in a 1996 *Newsweek* article subtitled “A founder laments a legendary company’s decline,” Wozniak wrote, “Our first computers were born not out of greed or ego but in the revolutionary spirit of helping common people rise above the most powerful institutions.”² Wozniak tied the foundational texts (computers) of Apple to a “revolutionary spirit” and a commitment to support “common people” in a fight against “powerful institutions.” The narrative from the co-founder of Apple chained out the protest fantasy type of the People’s Computer Company (PCC) and Community Memory. He did not mention math. He referenced the symbolic power of revolution through the story of a group of rebels standing up to evil powers. Wozniak was referencing the motivations for Apple, but the story remained the same as the story of Ted Nelson, PCC, Community Memory and Homebrew Computer Club. It was becoming the story of Silicon Valley.

The swift adoption of the personal computer would not have happened without a viable purpose and product. The personal computer had to be “translated into the terms of the world so as to gain the support and use it require[d] for its existence.”³ As I argued in chapter two, Silicon Valley provided a rhetorical vision and *ethos* that motivated the creation of the personal computer. If mainframe computers were for the “priesthood,” the rhetorical vision of Silicon Valley insisted that a personal computer must be designed as an act of rebellion for the rest of us in opposition to the military-industrial complex. Education and a hands-on attitude were instrumental to the execution of this vision. Apple embodied and actualized the fantasies of PCC, Community Memory, and Homebrew with an object small enough, useful enough and attractive enough to sit on desks across the country—a personal computer. In the process, Apple

transformed a hobbyist fantasy into a corporate mission that fused with a rhetorical vision defining the role of personal computing and Silicon Valley. The vision was equal part rebellion and utility, and its persuasive effect would be magnified by the public's discursive and material encounters with the products themselves. Apple and its products strengthened and influenced the impact of the Silicon Valley *ethos*. The necessities of a corporation, from financial and managerial protocols to marketing, was energetic. As a corporation, Apple was able to amplify the stories of Silicon Valley with a speed and reach beyond that of a hobbyist group, and with the release of viable consumer products, Apple brought the stories home.

The story of Apple started with the Apple founders and employees. They were ground zero for the uptake and proliferation hobbyist fantasy types and new fantasies of Apple and its products. Apple's computers and their components became symbolic cues for those working at Apple. Early Apple employees both adopted and spread hobbyist fantasy types and transformed them into derivative Apple fantasies, which in turn carried fundamental values of Silicon Valley—computers are possible, revolutionary, democratic, and necessary.

Although the allure of Apple products persists today, the seeds of fantasy were planted with three early Apple computer lines developed between 1976 and 1984—the Apple I, Apple II, and Macintosh (the trio). Between the Apple I and Macintosh, Apple released two additional computers, the Apple III and the Lisa, but neither were successful. Both the III and Lisa were targeted at businesses in contrast to the trio, each of which were marketed to “the people.” Unlike the III and Lisa, the I, II and Mac capitalized on a democratic appeal to the masses and positioned Apple as the true people's computer company.

Moreover, each computer in the trio held a more significant connection with Steve Wozniak and Steve Jobs than their less successful brethren. Apple I, Apple II, and Macintosh

each had a unique and powerful saga, or birth story, that connected them to the founders. Both Wozniak and Jobs believed in the Silicon Valley fantasy type of the necessity and promise of the personal computer, and each founder inspired a dedicated following at Apple. The founders functioned as *dramatis personae* in relationship with the computers, but the computers also shaped the relationship between the two founders. The Apple I provided the catalyst for Steve Wozniak and Steve Jobs to form a corporation. The Apple II became a compelling legacy for Steve Wozniak, and Macintosh was the same for Steve Jobs. The computer trio generated discourse from advertisements to reviews, but independent of the discourse, each computer embodied a fantasy that generated devotion from within and without. The computers became symbolic cues representing a rhetorical community with much to say about the nature of personal computing as evidenced in the design of its products. Max Chafkin noted that the simple phrase stamped on the bottom of each Apple product, ‘Designed by Apple in California,’ manages to “say a great deal while revealing little.”⁴

The phrase as a whole reveals little, but the inclusion of the word “designed” reveals the significance of design at Apple Computer. The statement tells a fantasy in brief—there are a dedicated group of people in California who attended to every detail of the product you hold in your hands. It does not say that the computer was simply “built in” or “manufactured in.” The stamp is a testament to an unofficial commitment of technology to “fit the imaginably useful and valuable.”⁵ Steve Jobs recognized the rhetorical power of design repeatedly. Wozniak and Jobs both contributed to a fantasy theme that portrayed computer engineers as artists engaged in an aesthetic pursuit; good design became a guiding fantasy. In a 2000 interview with *CNNMoney*, Jobs said, “Design is the fundamental soul of a man-made creation that ends up expressing itself in successive outer layers of the product or service.”⁶ Jobs captured the rhetorical nature of

design. Design expresses itself; it seeks to have an impact. At Apple, Wozniak and Jobs created a rhetorical community of designers. Apple employees became people who were creating machines that humans would want to interact with. The end user was always in consideration. Each design decision was intended to persuade an individual to use a machine. In his blog *Folklore* published in 2004, former Apple employee Andy Hertzfeld reflected on the rhetorical power of design in this retelling of the Macintosh story:

Enthusiasm is contagious, and a product that is fun to create is much more likely to be fun to use. The urgency, ambition, passion for excellence, artistic pride and irreverent humor of the original Macintosh team infused the product and energized a generation of developers and customers with the Macintosh spirit, which continues to inspire more than twenty years later.⁷

His opening contention that “[e]nthusiasm is contagious” affirms symbolic convergence theory’s postulate that small groups are powerful repositories for emotional motivation. This small group worked for Apple, and they created a product that “energized a generation” for decades.

Macintosh was energetic for both other computer developers and consumers. Hertzfeld did not reference design explicitly, and his language thereby implied that Macintosh was part intentional outcome and part embodiment of the ambition and humor of the team. Affect and design combined. Still the “passion for excellence” and “artistic pride” reflected intention. Both became hallmarks of Apple design. Intentional or not, the commitment to design was fundamental to the chipping away of the Silicon Valley fantasy themes to individuals because without ease of use the average American would have most likely never owned a computer; they would not have been inspired “more than twenty years later” by a machine. The shared consciousness of Apple designers, other developers and the public was reinforced by a design fantasy theme. Jobs often spoke of the shared corporate consciousness of this fantasy: “I’ve said this before, but thought it was worth repeating: It’s in Apple’s DNA that technology alone is not enough. That it’s technology married with liberal arts, married with the humanities, that yields us the result that

makes our hearts sing.”⁸ As a positive emotional reaction, hearts singing are evidence of fantasies churning out. Jobs depicted good design as fundamental to the emotional acceptance of technology.

The fantasy types originally expressed by hobbyist organizations combined with a commitment to design contributed to the creation of user-friendly machines, a hallmark of Apple computers. The fantasies stuck because they were reinforced by the rituals of corporate culture, which included events, shared enemies, and endless hours spent together “groking” on design.⁹ The rituals created and reinforced topological connections within an organization and supported the development of a shared value system or axiology. As told first hand by early Apple employees, the history of the company is filled with corporate birthday parties, wedding showers, bug hunts, basketball games and more; corporate enemies were not hard to find, both external (IBM) and internal (feuding product line developers), and it is common for a story to end with “actually, I hadn’t been home or showered for three days.”¹⁰ Such a phrase evidenced the intense physical and affective experience of being an early Apple employee. Apple employees would often spend days upon days together at Apple headquarters designing computers. Bormann called such “all-encompassing” commitments *lifestyle rhetorical visions*. These visions “provide models for such everyday behaviors as styles of eating, working, dress and social interaction.”¹¹

The Macintosh group provided the best evidence of a lifestyle rhetorical vision. The hours worked by the Macintosh group became so legendary at Apple that “Debi Coleman’s finance team decided to commemorate the effort that the entire team was putting forth in the traditional Silicon Valley manner: they made a T-Shirt.”¹² It was actually a gray, hooded sweatshirt, but on the back it said “90 Hrs/Wk And Loving It.” (See Figure 1). The story

reflected the amount of time that the group spent together, but it was also a fantasy theme in and of itself--the Macintosh group worked hard and liked it. Long hours became a source of pride.

Working hard was a value.



Figure 1. Macintosh Group Sweatshirt.¹³

Physical appearance was also important in the Macintosh group. To recognize the work of programmer Steve Capps, the group decided to all dress in Capps' signature attire (white button-up and jean shorts) one day. The day became known as "Steve Capps Day."¹⁴ Even more amusing, and telling, is the story of Smith's moustache. Smith had felt overlooked for a promotion for months, and then, as Hertzfeld recalls:

Finally, he noticed something that most of the other engineers had in common that he was lacking: they all had fairly prominent moustaches. . . . Tom Whitney, the engineering VP, had the largest moustache of all. So Burrell immediately started growing his own moustache. It took around a month or so for it to come in fully, but finally he pronounced it complete. And sure enough, that very afternoon, he was called into Tom Whitney's office and told that he was promoted to "member of technical staff" as a full-fledged engineer.¹⁵

The moustache alone did not result in a promotion, but the retelling of the story demonstrates that in a small group, appearance is a material cue that provokes a response among members. Physical connections strengthened Apple's rhetorical community by providing material markers of shared values. The community was primed to uptake fantasy.

Apple employees, including Wozniak, demonstrated an intense commitment to building machines because they believed in each other and the potential of computing. Most importantly, they believed that it was possible to build a personal computer. Most histories of the computer and biographies of computer icons feature the story of an individual constantly tinkering with electronic machines from ham radios to model trains. The individuals were often raised by engineers or fascinated by the story of one. A recurring character in computer histories and biographies is Tom Swift.¹⁶ Tom Swift was the hero of a fictional series for young adults popular in the 40s and 50s. Felsenstein, the moderator of the Homebrew Computer Club, named a computer terminal the Tom Swift Terminal "in honor of the American folk hero most likely to be found tampering with the equipment."¹⁷ Swift was an influence on Wozniak as well:

Now, Tom Swift was this kid—a teenager actually—older than me but still a kid like me. So I looked up to him. And he was also a scientist engineer who got to build things in a laboratory. Anything Tom wanted he could build, and he had his dad to help him with things. . . . Anyway, in my opinion, Tom Swift Jr. had the perfect life. And whenever there was a crisis on Earth, any kind of conflict that needed handling, he sprang into action. . . . There was no limit to what he could build. I remember once he built a spaceship to win a race around the Earth . . .¹⁸

The story of Swift's exploits served as a fantasy theme demonstrating the possibilities of technological innovation to Wozniak. Technology was the solution for remedying a "crisis on Earth." In this short passage, Wozniak highlighted the dramatic appeal of building represented by Swift and demonstrated the semiotic strength of a fictional text. By reading the stories, Wozniak became inspired; he "looked up to" Swift even though he was a fictional character. It was the perfect life to be able to build machines to solve any problem confronting Earth. The Swift fantasy would persist in Wozniak's actions. In the early 1970s, he hung a poster not of Cheryl Tiegs, but of Data General's Nova minicomputer on his wall: "There was no other computer around that looked as if it could sit on a desk." It was simple: a computer on a desk represented henceforth unknown access to information and computational prowess, perhaps the undoing of evil geniuses à la Swift.

Wozniak lived out the Swift fantasy theme by building machines, several of which would cement his friendship with Jobs. The story of Jobs and Wozniak's friendship provides the first evidence in Apple's history that a computer in and of itself can orient a rhetorical community, even a community of two. In the following section, I explore the role that objects and Silicon Valley played in connecting Wozniak and Jobs.

In 1970, Jobs and Wozniak did not know each other. By 1976, they had co-founded the company that would have the largest IPO since Ford in 1980. Wozniak met Jobs after designing his first computer, the Cream Soda Computer. This computer inspired the first dramatization in Apple's DNA by quite simply giving Wozniak and Jobs something to talk about. Wozniak's

Cream Soda co-designer Bill Fernandez knew Jobs and, after completing the rudimentary computer, decided that Jobs and Wozniak should meet. In his autobiography, Wozniak recognized, “[T]he Cream Soda Computer turned out to be the way I first met Steve Jobs.” Recounting their first meeting, Wozniak shared: “I remember Steve and I just sat on the sidewalk in front of Bill’s house for the longest time, just sharing stories . . . It felt like we had so much in common. Typically, it was really hard for me to explain to people the kind of design stuff I worked on, but Steve got it right away. And I liked him.”¹⁹ In Jobs, Wozniak found someone with whom it was easy to share stories, quite probably fantasy themes about things he had done or wanted to do. The connection suggests the importance that fantasy played in the successful partnership between the two innovators and also the ability of an object to orient and inspire discourse. Wozniak recounted how his connection with Jobs grew as they performed pranks and listened to Bob Dylan together.

Following the Cream Soda, Wozniak and Jobs strengthened their machine-inspired connection by becoming phone “phreaks.” In 1971 *Esquire* magazine ran a story about engineers around the country who were able to build phone hacking devices that enabled callers to make calls for free. It was a fantasy theme because it depicted the feats of past individuals engaged in a battle against phone companies. The hero of the fantasy theme, or rather the most notorious phone phreak, went by Captain Crunch. After reading the article, Wozniak called Jobs. An hour later, he picked up Jobs, and they drove to the technical library at Stanford to see if they could uncover a manual that would reveal the frequencies for building their own phone-hacking device, also referred to as a “Blue Box.” When Wozniak found what they needed he “froze and grabbed Steve and nearly screamed in excitement,” and they both “stared at the list, rushing with adrenaline.”²⁰ At the time, Blue Boxes were coveted because they allowed users to undermine

the phone company by avoiding charges and calling unlisted numbers, such as the Vatican or the FBI. As this account shows, Wozniak and Jobs were energized by the promise of a revolutionary machine capable of undermining a large corporation (Ma Bell). The Blue Box tapped the same anti-authoritarian values reflected in personal computer fantasies. Wozniak and Jobs rushed home and built it together. Several Blue Box adventures, including a brush with the police, meeting Captain Crunch in person, being robbed of a Blue Box at gunpoint, and selling Wozniak's superior digital phone-hacker to fellow college students, strengthened the dramatic connection between Wozniak and Jobs. Like the Cream Soda, the Blue Box oriented their discourse and actions. As described in the introduction, action shapes *ethos* by conditioning expectations of possible outcomes. The Blue Box confirmed for the duo that they could build, market, and sell a machine that could compete with and possibly undermine a corporate behemoth. The phone-hacking machine was a realization of the revolutionary possibility of technology.

The material and symbolic connection between Wozniak and Jobs, and in turn, between the duo and Silicon Valley fantasies would reach its ultimate expression in the Apple I. In the following section, I analyze the motivations behind the Apple I, focusing on materiality. I also establish how the Apple I reflected certain fantasies and ultimately became an object of fantasy for Apple employees, thus motivating future design efforts.

Apple I

The Apple I was Wozniak and Jobs first machinic embodiment of computer hobbyists' fantasy, and as their first computer, it would provide the impetus for founding a public company capable of disseminating those fantasies to the American public. The founding of a company was clear evidence that computers were possible. How possible would be marked by Apple's success

or failure. As the phrase “public company” implies, following its IPO, Apple became more connected to a national topology, but as Apple’s Public Offering Memorandum told, the company’s story started with the Apple I:

The company was operated from Los Altos, California, supplying Apple I, a single board hobby computer, until January of 1977. Apple I was successfully accepted among the then embryonic computer hobbyist community and several hundred systems were sold.²¹

The memorandum propagated the hobbyist saga of the company; it even recognized the importance of being “accepted” by a small group. The Apple I was the beginning of Apple Computer, and the Apple I was the result of fantasies surrounding the purpose and use computers and the appeal of designing a computer.

Although the Apple I was originally designed and built by Wozniak, The Homebrew Computer Club and a chip provided the motivation for building it. In his autobiography, Wozniak recounted the design of the Apple I. He shared, “I can tell you almost to the day when the computer revolution as I see it started, the revolution that today has changed the lives of everyone. It happened at the very first meeting of a strange, geeky group of people called the Homebrew Computer Club in March 1975.”²² Wozniak was invited to the first meeting by his friend Allen Baum, and he was a little miffed when the entire meeting turned out to be a discussion on microprocessors because he had little experience with them. He “was totally out of computers” because he had not followed the latest technological advances since he had first built his Cream Soda Computer. He “was scared and not feeling like [he] belonged,” but then someone passed out the technical specifications for a microprocessor. Wozniak went home with the specs. The specs were a symbolic cue that compelled Wozniak to design the Apple I. They were shorthand that revealed to Wozniak that he could build a personal computer:

That night, I checked out the microprocessor data sheet and I saw it had an instruction for adding a location in memory to the A register . . . Well, maybe this doesn’t mean anything to you, but I knew exactly what these instructions meant, and it was the most

exciting thing to discover ever. . . . It was as if my whole life had been leading up to this point. . . . Oh my god. I could build my own computer, a computer I could own and design to do any neat things I wanted to do with it for the rest of my life.²³

The semiotics of the schematic resonated with Wozniak, and he retroactively crafted a story about how the schematic has shaped his destiny. In this fantasy, his whole life had led to this moment. The materiality of the instructions revealed to Wozniak that his dream was attainable. Instructions, a material text, motivated action. He started that very night designing what would ultimately be called the Apple I. This one meeting and the shared schematic energized topological, semiotic, and axiological dimensions to create an environment of possibility. The meeting connected Wozniak with a group of people who spoke his language and dreamed his dreams. As a man of character within this group, Wozniak had to design what would become the Apple I. *Ethos*, in some sense, required it because he suddenly knew it was possible. Materially, the magic of the microprocessor provided the necessary dose of engineering inspiration. The microprocessor created the potential for the personal computer. In improving upon his original design, Wozniak noted that at the time computer memory was switching from magnetic to silicon. He was able to obtain silicon memory chips for the Apple I because someone showed up at Homebrew with some chips for cheap. Here again the material circumstances abetted by Silicon Valley supported the success of the Apple I.

The Apple I in and of itself would perpetuate Wozniak's commitment to building personal computers. Prior to the Apple I, hobbyist computers only had switches and blinking lights. There were no screens reflecting your discursive input. The Apple I, however, connected to a screen. Wozniak was enchanted: "I typed a few keys on the keyboard and I was shocked! The letters were displayed on the screen! It is so hard to describe this feeling—when you get something working on the first try. It's like getting a hole-in-one from forty feet away."²⁴ Here Wozniak connected the visceral fulfillment of sports with engineering. The positive outcome

affirmed the principle, whether it was efficiency or hours of work, that led to the outcome.

Designing a working machine was energetic for Wozniak because it was a material affirmation of his values. He desired a more user-friendly, interactive machine, and he achieved it. His engineering, a specific type of action, was affirmed, and as Miller argued, therefore, his mental character was transformed.

In addition to being the realization of a lifelong dream, the Apple I “was a great way to show off [Wozniak’s] real talent . . . of coming up with clever designs, designs that were efficient and affordable. . . . designs that would use the fewest components possible.”²⁵ Here was the first exemplar of values that would be adopted by Apple engineers through the years: efficiency. The desire to realize the potential was reinforced by his connection with a group of like-minded hobbyists who strived for the same ends — efficiency and affordability. The founder of Homebrew, Gordon Moore, had started the club because he did not think computers should be expensive, and every step towards a more efficient design meant that the computer would become smaller, and thus, more attainable. With the keyboard and display working, Wozniak started regularly demoing the Apple I at Homebrew meetings. He even Xeroxed copies of the design and handed them out for free. Today, Wozniak repeatedly shares that he was motivated by a desire to share a computer with his like-minded Homebrew friends. Even Jobs, typically noted for being ruthlessly business-minded, shared in *Return to the Little Kingdom*, a 2009 update of *The Little Kingdom*, “We had a passion to do this one simple thing which was to get a bunch of computers to our friends so they could have as much fun with them as we were.”²⁶ A connection with a small group of people motivated Wozniak and Jobs. They wanted to impress the small group and help the small group achieve their shared fantasy of computer ownership. The Apple I demo reinforced the chaining out of personal computer fantasies. Wozniak shared,

“[P]eople who saw my computer could take one look at it and see the future. And it was a one-way door. Once you went through it, you could never go back.”²⁷ The computer itself revealed a new way the future could unfold. Again, it created new possibilities, and thus, shaped *ethos* for those who interacted with the machine. With new possibilities came new expectations.

Wozniak showed off his design to his friend Jobs. Ultimately, the Apple I necessitated a company for its distribution. Wozniak brought Jobs to the occasional Homebrew meeting, and Jobs would help him carry in the TV monitor for the Apple I demo. Jobs was “by some marketing miracle able to score some free”²⁸ silicon memory chips from Intel for Wozniak’s computer. Intel was a “local” company with the material resources needed to perfect the Apple I. By the fall of 1975, Jobs pointed out to Wozniak that even though Wozniak had shared the schematics for his computer, most of the Homebrew attendees did not have the time or ability to build the computer. Jobs proposed that they build and sell the circuit boards for the computer. Jobs persuaded Wozniak by saying: “Well, even if we lose our money, we’ll have a company. For once in our lives, we’ll have a company.” The fantasy theme of “two best friends starting a company” motivated Wozniak to agree to starting a company.²⁹ It was a story about future possibility that motivated Wozniak to sell his HP65 calculator, and Jobs his VW van, to finance the ready-made circuit boards. Jobs almost immediately sold 50 to the Byte Shop, perhaps the first computer store chain in the country.³⁰ The \$25,000 order put Jobs, Wozniak, friends, and relatives to work building boards, but it also provided the material feedback that Wozniak and Jobs needed to continue designing computers. The order energized the fledgling operation. In *The Little Kingdom*, Wozniak shared, “[The Byte Shop order] was the biggest single episode in the company’s history. Nothing in subsequent years was so great and so unexpected. It was not what we had intended to do.”³¹ The material event of receiving an order reinforced an economic

potentiality necessary for the formation of a company. The order for Apple Is had persuaded Wozniak and Jobs to do something they, or at least Wozniak, had not intended to do—start a company.

With the establishment of a company, expectations for the production of computers exceeded those of a hobbyist club. A company had to cater to a broader customer base. Production volume, consistency, and quality, not just possibility, became considerations. From those considerations and Wozniak’s self-confidence came the Apple II. In the following section, I demonstrate how materiality and the revolution fantasy type motivated Wozniak to design the Apple II, and in turn how the Apple II would become a motivational machine for the ages.

Apple II

The Byte Shop Apple I order demonstrated that people wanted computers, and Wozniak knew he could build something even better than the Apple I. When the Apple II was released in 1977, the only employees were Jobs, Wozniak, Michael Scott, and Michael Markkula. Scott was the president and Markkula was the primary investor, but neither contributed to the design of the Apple II; it was pure Woz with a dash of Jobs. The Apple II, complete with color, became a material representation of Steve Wozniak’s Apple legacy, a symbolic cue for a saga, and it also demonstrated without doubt that personal computers could be more than a hobbyist’s toy. The Apple II line debuted in 1977 and remained in production for 16 years based largely on Wozniak’s original designs. In a 2004 interview with *CNN.com*, Jobs remarked, “Apple invented this industry with the Apple II.”³²

Wozniak’s design of the Apple II would attain iconic status and impact the shared consciousness of Apple employees. The engineering challenge of accomplishing more with fewer chips beckoned for a better computer. For example, Wozniak “knew [he] wanted to have a

computer that did color.” The story of the Apple II design, including how Wozniak pulled off color, became a saga, a story about the founding of Apple. Engineers experienced Wozniak’s designs first hand and talked about them. On *Folklore*, Hertzfeld shared, “Steve Wozniak is indisputably the father of the Apple II.”³³ Hertzfeld repeatedly highlighted the influence of Wozniak’s design prowess with stories such as this one about the Apple II disk controller:

In those days, most floppy disks used a recording technique called FM encoding, where one clock bit would precede each data bit to improve reliability. But that was overkill, it was possible to get more data on a disk if you used some of the clocks for data. So Woz used a technique called “group encoding” (although Woz called it “nybbblizing:”) to get five bits out of every eight transitions instead of four. He later figured out how to use six bits out of eight (the “16 sector” format vs. the earlier “13 sector” - non-Wozian drives used 10 sectors) improving the density further.

Material feats like this inspired young engineers such as 23-year-old, self-taught Burrell Smith. “[D]rawn to Apple by the sheer elegance of the Apple II design,” Smith started with Apple as a service technician, and as “he debugged broken logic boards, sometimes more than a dozen in a single day, he began to develop a profound respect and empathy for Steve Wozniak’s unique, creative design techniques.”³⁴ Smith’s actions fixing broken boards influenced both his opinions and standards. Action conditioned *ethos*. Hertzfeld described completing a questionnaire for a PR firm ahead of the Macintosh release. One question asked what college you had attended: “Burrell, who didn’t have a college degree, didn’t know how to answer the ‘College Attended’ question. He thought about it for a moment and then came up with the perfect answer: ‘Steve Wozniak University.’ In some fashion, we were all graduates of Steve Wozniak University.”³⁵ Wozniak became a symbol for great engineering, and the Apple II was a correlating symbolic cue.

The Apple II was also the first expression of Jobs’ legendary attention to detail in an Apple product. Many histories of the computer recognize the Apple II as the first computer designed for the mass market.³⁶ The Apple II became the standard because of the user experience

it provided, including what it could do, such as color graphics, but also because of how the computer looked. Jobs knew that a hobbyist was content to haggle with loose wires and stare at a shoddy metal cube, but the average consumer wanted to do neither. In his own words, “My dream for the Apple II was to sell the first real packaged computer...I got a bug up my rear that I wanted the computer in a plastic case.”³⁷ It was not the first time he would get a “bug up his rear” about an Apple design. The plastic case not only hid the daunting tangle of wires, it also made the computer feel more like a standard consumer appliance. Jobs’ insistence that design details mattered and Wozniak’s engineering ingenuity were ingrained in the Apple culture.

When the first IBM personal computer arrived on the scene, Hertzfeld recalled, “There was little, if any, Woz-like cleverness in the hardware design, using dozens of extraneous chips without having any cool features.”³⁸ The target of computer hobbyists’ and free speech students’ scorn from the 1960s, IBM, became Apple’s archenemy. Even if Apple was a corporation, it was not IBM. Unlike IBM, it was clever and cool. This comment revealed the budding rivalry with IBM, and IBM’s continued depiction as the evil, authoritarian corporation. Jobs similarly remarked in a 1982 interview with *InfoWorld*, “It’s curious to me that the largest computer company in the world [IBM] couldn’t even match the Apple II, which was designed in a garage six years ago.”³⁹ Apple took the stage to assume the role of the valiant, hobby-fueled corporation equipped with clever designs and potent fantasies. The next section explores the interplay of design, fantasy, and Jobs dynamic leadership in the development of Macintosh, the first computer designed by committee at Apple.

Macintosh

The Apple I and Apple II were the products of Wozniak and Jobs. The Macintosh was the first group design effort that would result in a successful consumer computer for Apple. This

quote from Hertzfeld reflecting on the design efforts of the Macintosh group is an apt summary of SCT at work:

The original Macintosh was designed by a small team that worked long hours with a passionate, almost messianic fervor, inculcated by our leader, Steve Jobs, and the excitement that we felt during its creation shines through in the finished product. The attitudes, values and personalities of the designers are reflected in the thousands of subtle choices that they make in the course of their design, coalescing into a spirit or feeling imparted to its users.⁴⁰

In this passage, the role of design is explicit; it coalesces “into a spirit or feeling imparted to its users.” The final product, in this instance Macintosh, carries a particular attitude to its users. In Hertzfeld’s story, a “small” group of people inspired by an impassioned leader and common excitement worked to share “values” and a “spirit” through the design of a personal computer. The Macintosh team hoped that the American public would accept the machine as a symbol of everything the team cherished and chain out the fantasies embodied in the computer.

The fantasies were not far removed from the Apple I, Apple II, or Silicon Valley. In fact, most of the fantasy types were copied and pasted straight from the guiding principles of the Apple I and Apple II. While he was not often present during Macintosh design meetings, Wozniak’s commitment to clever and lean engineering was a mainstay of Macintosh, in part because engineers were still inspired by Wozniak’s Apple II design. Day-to-day, however, the Macintosh group was led by Jobs, and his anti-authoritarian attitude and dedication to elegant design became central to the shared consciousness of the Macintosh group. Hertzfeld presented Jobs’ role as critical: “Although Apple was already a large company by then, Steve’s unique position in the organization enabled him to maintain the Macintosh group as a little island where Apple’s original values could flourish and grow.”⁴¹ The best example of this was Jobs’ insistence that the team have its own office, but it was also reflected in his ability to demand talent from other product lines join his team and to protect the team when it missed deadlines. The

consciousness was reinforced by the dynamics of a small group, including shared appearance, inside jokes, and a common enemy or two.

Just as Wozniak designed his computers for himself and his friends, Hertzfeld, a lead software developer for the Macintosh group, shared, “[W]e were our own ideal customers, designing something that we wanted for ourselves more than anything else.”⁴² Designing something they wanted included paying homage to Wozniak. The team “was inspired by Woz’s original design and tried to recapitulate its innovative spirit.”⁴³ The passion for Woz’s design chained out within Apple:

Burrell worshipped Woz’s Apple II design and had forged an idiosyncratic design style that was even crazier than Woz’s, using many clever tricks to coax enormous functionality out of the minimum number of chips. Somehow, Burrell’s embryonic Macintosh board reeked of the same creative spirit so prevalent in the Apple II; as soon as I saw it, I knew that I had to work on the project.⁴⁴

The clever efficiency of an “embryonic board” persuaded Hertzfeld that he needed to become a member of the Macintosh team. Design was an end worthy of pursuit unto itself. Stories of the Macintosh design are rife with Wozniak-esque values of fewer chips and engineering satisfaction. Even though Wozniak was not often there, he was at the heart of the standards of Apple engineering, namely efficiency. Engineers would marvel at achievements such as “a brilliant two chip design,”⁴⁵ or any design “using minimal hardware resources for maximal value.”⁴⁶ The devotion to engineering was reflected in statements such as, “It was fun for me to achieve the holy grail of disk performance without breaking into a sweat.”⁴⁷ Like Wozniak and his original desire to build a computer with fewer and fewer chips, the engineers shared a devotion to a minimalist chipboard thinking that “[t]he awesomely creative design of the Macintosh digital board was always the seed crystal of brilliance at the core of the project.”⁴⁸

The fantasy theme of Wozniak's design process chained out and shaped the creation of Apple products through the years. Design as efficiency and usability became repeated fantasy types.

Great engineering was reflected in ideas that increased either ease of use or ease of subsequent design and that were efficient, either in their use of space or code. Such feats were respected as challenging and honored for their elegance. One such engineering issue was localization, or designing a computer so that it was easily programmed for use in different languages. Programmer Bruce Horn recalls, "I can't even remember when I started to recognize that the localization ability was necessary; it was a meme (probably started by Joanna Hoffman) that infected us all in the Mac group."⁴⁹ A "meme" infecting a group is equivalent to a fantasy theme chaining out. When a great engineering idea was apparent, the group would adopt the idea as necessary to achieve.

Macintosh's fantastical heft did not derive from design alone. Design was aided by symbolism. At the helm of the Macintosh group, Jobs spread three powerful fantasy types: a "bicycle for the mind;" "real artists ship," and "it's better to be a pirate than join the navy." These types reflected the core Silicon Valley types, specifically of necessity and revolution, and in turn, contributed to an ethotic expectation. The "bicycle for the mind" started with an article in *Scientific American*, but came to represent the fundamental idea that a person with a computer was infinitely more powerful than a person without a computer. It was the hobbyist contention that computers were necessary. The artist and pirate types were introduced by Jobs at a retreat for the Macintosh group in January of 1983. Being an artist meant that design mattered; being a pirate meant it was okay to break the rules. Through these metaphors, Macintosh team members were invited to identify with both artists and pirates. Here again the fantasies of design and

revolution were reinforced. In the following sections, I explore each metaphor's connection to Silicon Valley fantasies, but first I address Jobs' role as a leader.

Jobs was a constant influence on the Macintosh group. He was present physically, but he also had a style that demanded attention. Accounts of Jobs often note that he had a “reality distortion field,” described by Hertzfeld as “a confounding mélange of a charismatic rhetorical style, an indomitable will, and an eagerness to bend any fact to fit the purpose at hand.”⁵⁰ Hertzfeld recognized the role of Jobs' rhetoric in crafting corporate fantasy. Artistry and skill on the part of the speaker were recognized by Bormann and other SCT scholars as a variable predicting whether or not a group would accept a particular fantasy theme.⁵¹ Other members of the Macintosh team have noted Jobs' style. In a 1984 interview with *Computers & Electronics*, Joanna Hoffmann, an Apple marketing executive, remarked, “He's a very motivational kind of guy, like a Roman legion commander.”⁵² Susan Kare, a graphic designer, recalled, “Steve would say we're really gonna remember those days as the best days of our lives.”⁵³ Jobs shared with the Macintosh team a fantasy theme in which they would in the future look back and relish the history they had shared. Jobs was adept at motivating inspired work and fantasy.

In *Design Crazy*, a collection of interviews with former Apple employees, Trip Hawkins shared the story behind “a bicycle for the mind.” Jobs came in with an article from *Scientific American* about the energy efficiency of animals. The article's conclusion was that while humans are not very energy efficient, a human on a bicycle is twice as efficient as the most efficient animal, a condor. Apple employees were to understand that a bicycle was to a human's physical efficiency as a computer was to mental efficiency—hence, a bicycle for the mind. The implication of the metaphor is that humans with computers are more powerful and efficient than humans without computers. Technology improves the human condition. The computer invites

users to partake in a fantasy theme in which they are empowered to accomplish more because of their use of the computer. “That image turned into a full-page ad in the *Wall Street Journal* on the day the company went public.”⁵⁴ The metaphor persisted through the years. A marketing manager from 2004 to 2006 noted, “The metaphor—the computer as a ‘bicycle for the mind’—have you heard this? That was very much a part of the way we talked about computers even when I was at Apple.”⁵⁵ The computer radically improved the human condition. It was revolutionary in its impact, and necessary for improvement. The ‘bicycle’ metaphor contained the fantasy types of Silicon Valley.

Jobs also imbued the Macintosh team with the idea that they were artists by giving his employees business cards featuring the title “Macintosh Artist” and using the oft-repeated phrase “true artists ship.”⁵⁶ “Ship” is a term for releasing a new product, such as the Macintosh. The phrase “artists ship” simultaneously recognized the aesthetic pursuit in which the Macintosh group was engaged and the urgency to release a product, i.e. to ship. The metaphor reflected Jobs’ commitment to design. He not only spoke about being an artist; he created rituals that created a physical memory of what it meant and felt like to be an artist:

The Mac team had a complicated set of motivations, but the most unique ingredient was a strong dose of artistic values. First and foremost, Steve Jobs thought of himself as an artist, and he encouraged the design team to think of ourselves that way, too. The goal was never to beat the competition, or to make a lot of money; it was to do the greatest thing possible, or even a little greater. Steve often reinforced the artistic theme; for example, he took the entire team on a field trip in the spring of 1982 to the Louis Comfort Tiffany museum, because Tiffany was an artist who learned how to mass produce his work.⁵⁷

A group outing to the Tiffany museum reinforced the fantasy type that design was art even if it is mass-produced. The culmination of this approach to design was the Macintosh signing party. “Steve gave a little speech about artists signing their work, and then cake and champagne were served as he called each team member to step forward and sign their name for posterity.”⁵⁸ Like

painters, the team signed the case. The signatures on the case constituted each member of the team as an artist. The signatures of the Macintosh group appeared on the interior of the computer casing for years to come. In a culture that privileged creativity, the axiological connection with artistic greats deepened the team's affective connection with their mission and simultaneously reinforced the importance of creativity.

The day-to-day design implication of being an artist was that every detail was important from the screen to the case; it reinforced the broader fantasy of design. Kare recalled, "There was an overarching idea of a computer your mom could use. So the typefaces couldn't look like those weird monospaced computer fonts."⁵⁹ The team shared a fantasy theme of a mom being able to use a computer, in turn, that fantasy shaped the design expectations. The core fantasy was that everyone should be able to use a computer; it was democratic in its commitment to accessibility.

However, it was also aesthetic. In one instance, a designer was excited about the software he had written to draw rectangles, but Jobs insisted that rounded rectangles were more important because they appeared more often in everyday life. Jobs wanted a user to connect their everyday experience to the environment of the computer, to have affective experiences built upon topological connections. He sent the designer back to the drawing board, and the designer dutifully returned with rounded rectangles.⁶⁰ Hertzfeld recalled a heated discussion over the appropriate car metaphor for the Macintosh: "'Not a Ferrari, that's not right either', Steve responded, apparently excited by the car comparison. 'It should be more like a Porsche!' Not so coincidentally, in those days Steve was driving a Porsche 928." Although, Hertzfeld shared that he found the metaphor "pompous," he "was impressed with Steve's passion for elegance in the industrial design and his powers of discrimination continually amazed me as the design took shape."⁶¹ As with the Apple II, Jobs obsessed about the case for the Macintosh. As Hertzfeld

recalled, “By the fourth model, I could barely distinguish it from the third one, but Steve was always critical and decisive, saying he loved or hated a detail that I could barely perceive.”⁶² Even the calculator design was not safe from Jobs’ discerning perception. Upon the reveal of the first iteration, Jobs remarked “Well, it’s a start, but basically, it stinks. The background color is too dark, some lines are the wrong thickness, and the buttons are too big.”⁶³ As a solution, the designer came up with a tool that allowed Jobs to lay out the calculator, and that calculator design remained on the Macintosh until the release of OS 9 in 1999.

The Macintosh designers were artists, but they were also pirates. The Macintosh building became central to the pirates’ fantasy. The group worked out of many buildings over the course of the design, but at the final office they hoisted a Jolly Roger and started referring to the building as “the pirates’ lair.” The name was inspired by the final Jobs’ fantasy type which he shared at the ‘83 corporate retreat: “It’s better to be a pirate than to join the navy.” As noted by *Design Crazy*, “The pirate flag came to symbolize the Macintosh’s radical ambitions to democratize computing— and the fact that the creators of the new computer had become a guerrilla force within an increasingly large and conservative company.”⁶⁴ The flag was a symbolic cue that captured the Silicon Valley fantasies of democracy and revolution.

In keeping with the pirate spirit, members of the Macintosh team recount feuds with other design groups at Apple, namely the Lisa group. Hertzfeld retold the story as follows: “The Lisa team in general told Steve to f*** off. Steve said, ‘I’ll get this [Macintosh] team that’ll make a cheap computer and that will blow them off the face of the earth.’”⁶⁵ Even though both computers were Apple products, Jobs led the Macintosh group to believe that they were in competition with Lisa. Externally, the Macintosh group was at battle with IBM. The clearest evidence of this rivalry is a proposed cover of the “Inside Macintosh” developer’s manual. A

tribute to a popular comic book series, the cover features a vampire slayer driving a stake through the heart of “Big Blue,” the nickname for IBM. (See Figure 2) A mission to do something radical along with clear enemies created a heightened imperative to fulfill the Macintosh fantasy—to release an insanely great personal computer.

Starting with the Cream Soda Computer, machines are at the heart of Apple fantasy themes. The Cream Soda, Blue Box, Apple I, II, and Macintosh computers provided powerful reasons to act and connected a community. At first, the community consisted of two friends: Steve Wozniak and Steve Jobs, but it quickly became a corporation. This chapter explored the fantasies shared by the early employees of Apple Computer through their firsthand accounts. This chapter has argued that the fantasy types of hobbyist groups and the materiality of design and objects coalesced into the formation of Apple Computer and the design of three rhetorically powerful machines—Apple I, Apple II, and Macintosh. Without Apple, personal computers could have remained metal-cased blinkies. In the biography *Becoming Steve Jobs: How a Reckless Upstart Became a Visionary Leader*, journalists Brent Schlender and Rick Tetzeli retold the story of the Apple I’s debut at Homebrew. Some hobbyists were “beefed that Steve was flouting the club’s community spirit and its history of sharing ideas freely by asking them to pay for a prebuilt machine.”⁶⁶ Hobbyists were content to solder circuit boards, contend with tangled wires, and earn nothing for their endeavors, but dangling wires and hand-drawn newsletters were not going to bring computers to the people. For the personal computer to reach the American public, it had to go corporate, but perhaps more importantly, it had to be designed to be understandable and to meet human needs.

This chapter traced the transformation of the hobbyist commitment to computers as possible, revolutionary, democratizing and necessary into cornerstones of Apple’s corporate

culture. These fantasies, along with the sheer enjoyment of engineering, motivated Wozniak, Jobs, and future Apple engineers to design a usable computer, and in the process, design became a key dimension of Apple's corporate fantasy. The commitment to design was a product of a fantasy in which engineers were crafting a computer for everyone, not just those who were willing and eager to build their own machine. Because its goal was to encourage the average American to interact with a computer, Apple's design efforts were both rhetorical and democratic in spirit. Design resulted in machines, including the Cream Soda and Blue Box, that oriented discourse and motivated the creation of Apple Computer. The machines became objects of and creators of action and discourse, and the material implications of the machines were amplified by symbolic connections to the dominant fantasy types of Silicon Valley. The next chapter analyzes the role the user-friendly personal computer and the marketing efforts of Apple played in transporting Silicon Valley fantasies from the Cupertino offices of Apple to the homes of the American public.



Figure 2. Inside Macintosh Cover. ⁶⁷

Chapter 4: Personal Computer Fantasy Themes Go Public (1976-1984)

“America will never be the same. . . . the entire world will never be the same.”¹

This was the proclamation of journalist Otto Friedrich in his cover story for *TIME* magazine christening the personal computer the “Machine of the Year” on January 3, 1983. His words reflected the sense that computers were going to change not just science or mathematics, but the fundamental character of the nation and the world. A revolution had happened, or at least was underway. The idea that computers were revolutionary had reached the American public. Chapter three followed this revolution fantasy, along with others, as they evolved within the offices and minds of Apple employees. This chapter focuses on texts that shared the fantasies of Silicon Valley and Apple Computer with the public. I start with an analysis of articles in *TIME*’s “Machine of the Year” issue before returning to the Apple I, II and Macintosh to frame the exploration of fantasies. The *TIME* issue provides a detailed representation of the influence of the personal computer on the American public in 1983 and established Apple’s primacy in the story of the personal computer. The fantasies conveyed by the marketing and design of the Apple I, II, and Macintosh paralleled the fantasies that have been uncovered and tracked throughout this thesis. The marketing of each computer was accomplished through product launches, print and television advertisements, and public relations outreach. For each computer, I focus on texts representative of these efforts. My analysis reveals that the personal computer engendered a series of complicated questions regarding the nature and purpose of computers and that Apple, through its machines and discourse, worked to answer those questions with the fantasies of Silicon Valley. By bringing the personal computer to the public, Apple facilitated a revisioning of *ethos* as Americans learned to value the actions they undertook when using the first public object of Silicon Valley.

Even amidst today's constant media streams, *TIME*'s announcement of the "Person of the Year" resonates nationally; thus, the impact in 1983 could have only been more notable. The cover story was evidence that in January of 1983 the public was aware of the personal computer; the object had earned a moniker suggesting it was the most significant 'thing' of 1982. Apple Computer brought the personal computer to the American public. In the following analysis, I demonstrate that Apple I, II, and Macintosh and the public discourse associated with them were restatements of Silicon Valley and Apple Computer fantasy types: (1) Personal computers are possible. (2) Personal computers are revolutionary. (3) Personal computers are democratizing. (4) Personal computers are necessary, and (5) Personal computers are user-friendly. The first four types had circulated in the milieu of 1960s San Francisco, were picked up by computer hobbyist groups in the 70s, and reached their full realization in the computers of Apple in the early 80s. The fifth was a result of Apple's dedication to design. As Apple computers were bought by the public, Silicon Valley values as transmitted by the personal computer were adopted.

The cover story for the "Machine of the Year" issue, entitled "The Computer Moves In," reflected the original fantasy of personal computer hobbyists— personal ownership of a computer. The image of a computer "moving in" was a powerful metaphor for the movement of the computer from the specialists' sphere of priests and hobbyists into the home of the American public. Americans no longer had to be aware of and able to attend a meeting of the Homebrew Computer Club in Menlo Park for a one-on-one experience with a computer; they could just go home. Ownership was possible. The article presented questions that accompanied this fantasy that was now a reality, including: How will using a computer change me and the world? Why do I need a computer? How should I use a computer? And, why was the computer invented?

The cover image reflected the tension between the reality offered by machines such as the Apple II and the lingering fantastical nature of personal computers. The cover did not feature real people and real computers. Instead *TIME* commissioned pop sculptor George Segal to craft two statues of people made from plaster, and the statues were depicted alongside concept computers also commissioned by *TIME*.² Despite proclaiming the arrival of the personal computer, the cover perpetuated a sense that computers were still unreal.

The use of statues in lieu of actual people also conveyed a message that computers impacted the fundamental nature of their users, a metaphorical representation of *ethos* in transformation. A personal computer was an object of discussion and production, but it also worked to reshape the subject positions taken by both its designers and end-users. The boundary between object and subject was blurred as the computer worked to constitute its subject, and thus, functioned rhetorically. The computer “encouraged its own forms of consciousness,” a consciousness that was more object-like or objective.³ The consciousness was linked to both the capabilities and the process of working with the computer. Because the machine enacted its own computations, a person using a computer experienced reality differently than a person using paper and pen for example.

This idea was parroted in “A New World Dawns,” an essay by Roger Rosenblatt in the same *TIME* issue. Rosenblatt wrote: “A mess of screws and buttons, a whole heap of plastic. Comes with new words too: RAMS and ROMS. Think that’s what the machine is made of, do you—the hardware and the software and the mouse? Not a chance. The computer is made of you, lady. It’s got you all inside it. You wished it here.”⁴ The attention to “new words” reflected the burgeoning semiotic influence of the personal computer. “RAMS” and “ROMS” were the words of hobbyist newsletters, but Rosenblatt engaged every reader in a fantasy theme in which their

very consciousness was inside the computer. The computer was no longer a bicycle for the mind; it was the mind. How was a reader to separate their judgments from those of their personal computer?

A computer invited a complicated relationship with a machine. A computer could make you more like a computer, or you could make your computer more like yourself. In fact, your computer was you. A farmer quoted in “The Computer Moves In” reflected this complex relationship. The agriculturalist purchased a \$12,000 computer system and used it to calculate a statistic pertaining to the weight of his pigs: “We never had this kind of information before. It would have taken too long to calculate. But we knew we needed it.” The farmer’s computer fantasy theme parroted the stock explanation that computers were necessary. The farmer had always known he needed the data made possible by the machine. A poll cited in the article indicated that 67% of Americans thought that “the computer revolution” would “raise production and therefore living standards” and 68% thought that it would “improve the quality of their children's education.”⁵ The majority of the American public agreed with a fantasy theme in which personal computers improved living standards. Computers were necessary because they enabled personal improvement.

What was the intended purpose of a personal computer? There were practical purposes of course, but the revolution fantasy type did not waver with the pragmatic application of the machine. Friedrich shared the vision of a computer revolution. In justifying the unprecedented choice of a machine for the person of the year, he wrote, “There are some occasions, though, when the most significant force in a year’s news is not a single individual but a process, and a widespread recognition by a whole society that this process is changing the course of all other processes.”⁶ The phrase “significant force” demonstrated the energetic charge of the personal

computer. The magnitude of the force was reinforced by the depiction of a process capable of changing all other processes. The statement may at first appear to be an overstatement, but take a moment to ponder: what process has *not* been impacted by computers? Friedrich recognized that the revolution was as much about the process engendered by the object as it was about the object itself. This distinction reflected a sense that the computer was more than just a machine; it was a series of actions. He concluded that “[p]erhaps the revolution will fulfill itself only when people no longer see anything unusual in the brave New World,” a reference to Aldous Huxley’s dystopian novel sure to have left some unease in a reader. Huxley’s *Brave New World* was not a desirable place. Yet, in this quote, the revolution appeared to have its own sustaining energy, an energetic ability to fulfill itself.

In his essay, Rosenblatt juxtaposed pragmatic uses of a personal computer with the democratic fantasy type:

No, not to do your taxes or to teach you German or to whip you in Pac-Man four out of five. You wished it here because the country was running low on dream time. Which provides equal time. I'm talking social equality. I'm talking freedom with a capital F, like when the railroad first rolled in 150 years ago, roaring and puffing over the countryside, scaring the chickens and the cows, but offering everyone a ride all the same, that's everyone, I say, giving the Republic to the people. Just like the computer.⁷

This passage depicted the reader as pondering possible uses for a computer; it was a fantasy theme about what a reader could and should do with a personal computer. Rosenblatt dismissed practical uses and aligned the computer with the American dream of freedom and equality, with democracy. Freedom and equality were the cornerstones of the American Revolution, and here Rosenblatt’s call to “give the Republic to the people” echoed the rallying cries of the People’s Computer Company. In this passage, the computer actually “gave” the Republic to the people. Ownership of a computer was the realization of democracy.

Like the railroad that carried the spirit of Manifest Destiny, the spread of the personal computer felt inevitable. The omnipresence of the personal computer was physical proof of what had been only a fantasy less than ten years prior in 1973.⁸ The sense of inevitability was a new fantasy theme in which the personal computer marched without obstacle into the future. This fantasy type was a derivation of the computers as possible fantasy type. By achieving what had been deemed impossible, the invention of the computer had affirmed the optimism of personal computer engineers. If they could dream it, we could use it. Friedrich wrote that “there is an inevitability about the computerization of America. . . . [T]he essential element in this sense of inevitability is the way in which the young take to computers: . . . as a game, a pleasure, a tool, a system that fits naturally into their lives. . . . [T]he computer is a screen that responds to them, hooked to a machine that can be programmed to respond the way they want it to. That is power.”⁹ A “game,” a “pleasure,” a “tool,” a natural, responsive “system” that imparts a sense of power—these were the same dynamics fueling Silicon Valley engineers designing computers. Optimism coupled with affective engagement animated the uptake of personal computers.

The fate of the computer was linked with youth, a symbol of boundless energy, and a reflection of the role of energies in the dissemination of the personal computer. The following passage also reflected this energy:

As both the Apple Computer advertisement and the Las Vegas circus indicate, the enduring American love affairs with the automobile and the television set are now being transformed into a giddy passion for the personal computer. This passion is partly fad, partly a sense of how life could be made better, partly a gigantic sales campaign. Above all, it is the end result of a technological revolution that has been in the making for four decades and is now, quite literally, hitting home.¹⁰

“Circus,” (a reference to the Consumer Electronics Show in Las Vegas) “love affair,” and “giddy passion,” were not neutral depictions of a technological development. They captured the affective intensity surrounding the personal computer, the culmination of a forty-year long

“revolution” ready to “hit home.” The metaphor suggested that the personal computer was ready to be purchased for home use but also that Americans were beginning to understand the potential of personal computing. The reflection that the public’s interest in the personal computer was a “fad,” a “sense of how life could be” and a “sales campaign” aptly reflected the dimensions of rhetoric at work: a “fad” spread through fantasy themes, a “sense” captured by affect, and a “sales campaign” energizing distribution. Technological inevitability was derivative of the “computers are possible” fantasy type, and the appeal of Apple’s computers were at the center of the inevitable adoption of technology.

Entire families were involved in the decision to purchase a computer, as recounted by the story of a family that voted “on whether to go to California for a vacation or to buy an Apple. The Apple won, 3 to 1.”¹¹ A computer was as appealing as a vacation, and the computer at stake was an Apple. The story reflected Apple Computer and their machines’ position at the epicenter of public awareness of the personal computer. The opening vignette of “The Computer Moves In,” was a description of an Apple ad:

WILL SOMEONE PLEASE TELL ME, the bright red advertisement asks in mock irritation, WHAT A PERSONAL COMPUTER CAN DO? The ad provides not merely an answer, but 100 of them. A personal computer, it says, can send letters at the speed of light, diagnose a sick poodle, custom-tailor an insurance program in minutes, test recipes for beer. Testimonials abound. Michael Lamb of Tucson figured out how a personal computer could monitor anesthesia during surgery; the rock group Earth, Wind and Fire uses one to explode smoke bombs onstage during concerts; the Rev. Ron Jaenisch of Sunnyvale, Calif, programmed his machine so it can recite an entire wedding ceremony.¹²

The ad was a poignant fantasy theme depicting the personal computer as an agent capable of heroic, expert feats, who palled around with celebrities. The retelling of the ad demonstrated that Apple advertisements were being noticed, and it also reinforced the original purpose of the ad—to reach the public with a story about the usefulness of an Apple computer. Later in this chapter,

I discuss in detail what ads such as this accomplished, but here I am more concerned with demonstrating Apple's centrality within national fantasies about personal computers.

Other articles in "The Machine of the Year" issue also indicated the prominent place of Apple. One article proclaimed that "Apple's Steve Jobs is the most famous maestro of the micro."¹³ The word "maestro" reinforced the image of computer designers as creative artists. A hardware review shared that the Apple II Plus was "[t]he hardy bestseller of the late '70s" and "also the hardy bestseller of the early '80s." Why was this? "More programs are available for this six-year-old machine than for any other single computer, some 16,000 in all. Also more user groups, more space in the computer magazines, more plug-in expansion units, more peripheral devices." The review concluded: "It used to be that when something was done on a microcomputer, it was done first on an Apple II. Today IBM, Commodore and Atari are changing that."¹⁴ At the beginning of 1983, however, Apple was the brand most strongly associated with the personal computer. The association had been built through the rhetorical faculty of marketing and design, or as the review put it, "user groups," "computer magazines," and "expansion units."

The following sections reveal how the marketing and design of the Apple I, II, and Macintosh worked rhetorically to reinforce the fantasies of possibility, revolution, democracy, necessity, and user-friendliness. For each computer, marketing included a public launch, advertisements, public relations campaigns, and although Apple did not always initiate them, user groups. Each computer also generated reviews, which provide insightful texts for understanding how individuals interacted with and reacted to the computers.

While the concerns of marketing were largely symbolic, design transmitted the symbolic into the material. The fundamental issue confronted by design was usability. Apple designers

needed to create a computer that the average American could use and would want to use. They needed to make the computer truly personal. The most apt description of what Apple was trying to achieve is the impression of a “computer as appliance,”¹⁵ as easy and as useful as a refrigerator. In the context of design, it is helpful to remember that prior to the Apple I, personal computers were either “blankies” or “blinkies”¹⁶ as evidenced by the very first Apple ad: “No More Switches, No More Lights.”¹⁷ Computers either had only switches (blankies) or lights (blinkies) on their front panel, and “[t]he owner needed enough patience and skill to plow through pages of arcane instructions, sort components from plastic bags, test the chips, wield a soldering iron, and deal with problems like a chunky power supply that was prone to overheat.”¹⁸ Blankies and blinkies were rhetorical nightmares; everything about them communicated to the end-user that computing was difficult, but hobbyists did not mind. As retold by the offering memorandum for Apple’s IPO, “during the latter part of 1976 it became evident to the two founders that a much larger and more profitable market would come into existence as small computers moved from the hobby market into the home (consumer) market.”¹⁹ This realization, of course, had started with the Apple I in 1976.

Apple I

“It was Steve’s idea to hold them in the air and sell a few.”²⁰

Reflecting its hobbyist roots, the “product launch” for the Apple I happened at the April 1976 meeting of the Homebrew Computer Club. As recounted in *The Little Kingdom*, the launch consisted of remarks by Wozniak and Jobs. Wozniak focused on the technical details of the machine, including the memory size and speed; Jobs surveyed the crowd to determine how much a computer hobbyist might pay for the new device. The performance was a blend of the cornerstones of Apple’s rhetoric: design and marketing. The device itself was a single personal

computer card containing all of the chips necessary to hook up to a video terminal and keyboard and start computing. With the Apple I, the primary action was no longer building a computer; it was figuring out what to do with the computer.

The first magazine ad for the Apple I depicted the dominant fantasies of Silicon Valley and Apple: computers were user-friendly and revolutionary. The ad ran in *Interface Age*, a publication that had evolved from a club newsletter for the Southern California Computer Society. Because it developed from a dedicated hobbyist group, “[t]he magazine catered to a fairly technical readership” according to a website dedicated to vintage computer publications.²¹ Featuring a diagrammed picture of the personal computer card with labels such as “FIRMWARE IN PROMS,” “CRYSTAL CONTROLLED TIMING,” and “BREADBOARD AREA” and boasting technological achievements such as a “large reduction in chip count,” the ad was clearly targeted to individuals who already had computer know-how.²² It even captured the Woznian ideal of decreased chip count.

Even so, the ad reflected fantasy types that would become central to Apple’s vision: usability and revolution. The ad boasted that “initial set-up is essentially ‘hassle-free’ and you can be running within minutes,” plus the card could display “960 easy to read characters.” The headline proclaimed this was the “First Low Cost Microcomputer System with a Video Terminal and 8K Bytes of RAM on a Single personal computer Card,” a mouthful, but a clear announcement that something new had arrived. The Apple I was still referred to as a microcomputer, not a personal computer. Still, this new thing, the Apple I, “opens many new possibilities for users and systems manufacturers.” Now, “the door is open to all kinds of alphanumeric software.” “New possibilities” and open doors conveyed great potential for something different, and they invited readers to walk through the opening. An open door

contained the potential for a new state of being, and therefore, these metaphors transmitted the symbolicity of a revolution. The ad continued, “our philosophy is to provide software for our machines free or at minimal cost.” The commitment to free, or at least very cheap, software reflected the hobbyist commitment to bring computer power to everyone. The emphasis on software also related to the issue of usability. Without software, a computer was in essence useless.

The counterculture ideals perpetuated through the years by Apple were reflected by the Apple I in other ways besides advertising. As the ad indicated, the personal computer cost \$666.66. The Satanic connection, while not intentional, brought attention. The price tag was an objective calculation based on the cost of materials, but the public drew an immediate connection to the number of the beast. Materially, the parts were not mainstream even by hobbyist standards. In an effort to control costs, Wozniak had built the Apple I around the MOS 6502 microprocessor. The Intel 8080 was considered the best microprocessor and had become the standard for the time. Thus, the 6502 was considered “Wozniak’s nonconformist decision.” As distributors and retailers planned to “discontinue stocking 6502 machines,” Apple became “an unconventional local curiosity.”²³ A Homebrew Club survey of computer ownership in January of 1977 revealed that Apple was in eighth place in terms of market share with 3.2967 percent.²⁴ The relative obscurity of Apple in 1977 demonstrates the cumulative impact of the subsequent machines and fantasies.

The Apple I was nonetheless significant in terms of rhetorical impact. The Apple I provided the foundational story, or saga, for the company. The narrative of the early days of Wozniak and Jobs building computers in a “garage”²⁵ would be told over and over again even though they actually started in a bedroom. The physical connection to a garage drew upon

associations with the automobile, another iconic American invention, and was therefore, symbolically poignant. As early as 1984, Moritz also recognized that “Apple was also something of a dream for a public-relations man. It was a cheerful story that, once told, was difficult to forget and revolved around the sort of distinctive personalities that, at least for journalists, always help give companies a clear image.”²⁶ The story of Apple was a powerful fantasy theme, a saga that journalists liked to tell and the American public liked to hear. The Apple I united Wozniak and Jobs symbolically. It was, and still remains, a powerful genesis story for public consumption.

Apple II

“The spray of public splash is made of facades, gestures and illusions.”²⁷

As with the “launch” of the Apple I, the leaders of Apple capitalized on the physical presence of people for the release of the Apple II. The Apple I was released at a gathering of the Homebrew Computer Club; the Apple II was unveiled at the West Coast Computer Faire, the first computer show to be held on the West coast in April of 1977. Releasing the product directly to a group of people increased the propensity for related fantasy themes to chain out. The physical presence of bodies intensified topological connections. Jobs was one of the first exhibitors to commit to the show, and as a result, Apple commanded a space at the front of hall, and the company erected an impressive booth featuring a “smoky, backlit, large and illuminated Plexiglass sign carrying the new company’s logo and a large television screen to display the computer’s capacity. Three computers lay on two counters. These gave the impression of substance and bulk even though they were Apple’s only fully assembled machines.” Investor Mike Markkula and publicist Regis McKenna persuaded Jobs to wear “the first suit of his life.”²⁸ Wozniak corroborated: “We all agreed to dress nicely.”²⁹ With a prominent booth, fancy

clothing, and three computers—material markers—the Apple founders created the impression of success. In the following weeks, 300 orders would come in for the Apple II, a hundred more than the total Apple Is sold.³⁰

Alongside the orders, fantasy themes depicting Apple's formidable presence at the fair would spread.³¹ While Moritz maintained that the Faire was not a true coup for Apple, Swain and Freiburger's *Fire in The Valley*, which was published the same year as Moritz's *The Little Kingdom*, concluded, "The First West Coast Computer Faire was a big success for Apple." In the book, Chris Espinosa, an early Apple programmer, shared, "After the Faire, we had a sense of exhilaration for having pulled off something so well, not just for Apple, but for the whole computer movement."³² Espinosa depicted the development of the computer as a "movement" suggesting that those involved in the design of the computer felt as if they were part of a cultural phenomenon unfolding across the nation. To judge the objective success of the Faire may not be possible, but symbolically, Apple's participation left an impression both on Apple employees and the public. The company "could do no wrong" according to chroniclers of the development of the personal computer in Silicon Valley writing in 1984.³³

Even so, in a meeting to discuss the marketing of the Apple II, Apple III, Lisa, and Mac a few years after the Faire, Fred Goldberg, Apple's account manager with advertising agency Chiat/Day, proclaimed: "People don't even know they need these damn things," referring to personal computers.³⁴ It was the job of Goldberg, and other advertising professionals, to create the need, and they executed with eloquence. It was a restatement of the fantasy that computers were necessary, but the challenge was to convey that necessity to the public with language. Words mattered to the Apple team. In San Francisco, they forced a dealer to change its name from Village Discount to Village Electronics.³⁵ Apple did not want to be associated with

discounts; it diminished the value of the machine both economically and symbolically. Starting with the Apple II, Apple's marketing campaigns attended to words and focused on generating a demand in the consumer market. The task started with creating a compelling need. The central fantasies of these campaigns would be drawn from the hobbyist playbook: Personal computers are revolutionary, democratic, and necessary. A central fantasy of Apple, personal computers are user-friendly, was also captured in the campaigns.

Advertising was a primary rhetorical vehicle for Apple, and the company started working with the firm of Regis McKenna in early 1977. McKenna was considered the best in the Silicon Valley marketing business, having been responsible for the success of semiconductor firms including Intel. His notoriety was best represented by his business card which listed his title as simply "Himself." Working as "himself," McKenna influenced Apple's marketing in the early years; his first demand was a new logo.³⁶ The result was the now iconic bitten apple. In its original iteration the colors of the rainbow filled the apple, a tribute to and reminder of the standout color capabilities of the Apple II. The logo would also become a powerful symbolic cue for Apple's values. The new logo would be the first of many marketing innovations McKenna and his team would bring to Apple.

Apple was the first personal computer business to start a co-op advertising program with retailers.³⁷ This meant that they would underwrite advertisements that featured retailers as long as the advertisements also featured an Apple computer. This commitment to advertisement reflected Apple's dedication to distributing its message far and wide. The program strengthened Apple's presence with the topology of computer retailers, a network of stores across the nation.

Prior to the release of the Apple II, microcomputers had typically been advertised in hobbyist magazines such as *Byte* or *Computerworld*. The Apple II had ads in publications with

much broader circulation and different readership, such as *Scientific American* and *Playboy*.³⁸ With advertisements alongside popular science stories and centerfolds, Apple's personal computer started to obtain awareness among consumers unfamiliar with ROM and RAM. These placements also created an interesting juxtaposition of connections, one technical and scientific, the other popular and sexual. Apple was apparently for everyone; it was democratic.

The first print ad for the Apple II was two full pages. One page featured a husband and wife at home in the kitchen, the woman at work preparing a meal while the husband used the Apple II on the kitchen table. A poster of a red apple hung on a back wall, a clear symbolic cue for Apple. The scene was warm, making the Apple II appear right at home in a kitchen alongside other easy-to-use appliances. The wife gazed at the husband who was staring contemplatively at the Apple II. In 1977, the Apple II was just a keyboard, so here was a gentleman entranced by a keyboard, not the screen displaying three multicolored lines on a presumably important graph. The screen was not important; the new machine was. The scene of a man, a woman, and an A/apple provoked certain questions: Was the computer also a source of forbidden knowledge? In one version, an illustration on the opposite page displayed a man and woman using Apple IIs in a classroom creating an explicit association with education; in the other, a picture showed the same man and wife playing PONG.³⁹ Accessing knowledge may appear innocuous in the ad, but information was at the heart of hobbyists' revolutionary zeal, and games had always made the revolution both entertaining and engrossing. Symbolically both information and games reflected an interest in controlling and manipulating environments.

The second page was mostly dedicated to text describing the Apple II. The word count reflected the newness of the machine. There was a great deal to be explained, and the ad included a beige sidebar dedicated to technical specifications, including the option for a hobbyist to

purchase the board without the keyboard encasement indicating that the computer was still not one hundred percent a product for every consumer. The ad ran with two different headlines, either “You’ve just run out of excuses for not owning a personal computer,”⁴⁰ or “The home computer that’s ready to work, play and grow with you.”⁴¹ The different language employed in the headlines reflected that the ads were working to define a market. Was it a “personal” computer or a “home” computer? An early poster hung in computer stores remained divided, announcing “Apple II: The Home/Personal Computer.”⁴² Whether it was a personal or home computer, the full page text that accompanied both ads reflected the same fantasies: usability and usefulness. After describing the set-up, the ad asserted, “Only Apple II makes it that easy.”⁴³ The ease of use was a central feature of the ad copy. Indeed, using the computer was featured as a benefit in and of itself: “. . . the biggest benefit . . . is that you and your family increase your familiarity with the computer itself. The more you experiment with it, the more you discover about its potential.” The action of using a computer was portrayed as beneficial in and of itself regardless of the actual outcome. There was no mention of mathematical precision or scientific insights, just of computer use and computer potential. The ad did propose some uses, “Start by playing PONG.” Once again, games were a gateway to the personal computer. Then, “[a]s you master Apple BASIC, you’ll be able to organize, index and store data on household finances, income taxes, recipes and record collections. You can learn to chart your biorhythms.” To be clear, the Apple II did not come with software to chart your biorhythms. (You’d have to wait for the FitBit.) Instead, Apple had faith that the Apple II was so simple and the uses so compelling that you would figure out how to program the computer yourself. The computer would “grow” with you.

In addition to print advertisements, Apple ran television commercials for the Apple II. Starting in 1981, they ran six commercials featuring Dick Cavett. At the time, Cavett was an Emmy-award winning television host with a morning show on PBS. Between 1968 and 1975, Cavett had hosted shows on ABC and CBS. A 1970 article in *Life* depicted Cavett as a rising late-night star whose “demon curiosity, civilized wit and talent for listening . . . [had] made tube-watching in the wee hours an intellectually respectable vice.”⁴⁴ A *Vanity Fair* article similarly remembered that “[d]uring the 1960s and 70s, ABC’s *The Dick Cavett Show* established its self-effacing host as ‘the thinking man’s Johnny Carson.’”⁴⁵ Cavett represented everything that Apple wanted its personal computers to be: approachable, smart, and welcome in every American home.

This was conveyed clearly in his first commercial for Apple. Cavett gets straight to the point: “Computers have always scared me. I grew up believing that only scientists and engineers could understand them. Then I started to work with Apple personal computers, and I learned how easy it is to use one.”⁴⁶ By sharing a fantasy theme in which he was scared of computers in the past, Cavett identified with the average American who was presumably overwhelmed by the complexity of the computer. Cavett reassured the average American that this computer was “easy.” The computer on the table was an Apple III, but Cavett did not mention it by name. The message was simply that computers were user-friendly.

In the first commercial, Cavett highlighted the financial capabilities of Apple computers. In subsequent commercials, the message was still pragmatic, addressing the overall ease and utility of a personal computer. There were few catchy taglines, and the only image was Cavett and perhaps one other person physically using the computer. In one, Cavett explained that he was learning how to use text editing; he described it as “useful,” and quips, “Some of my texts

could use some editing.” Cavett needed a computer. He was enacting the fantasy type of computer necessity for the American public. He concluded that the computer could be used for a “zillion other things.”⁴⁷ In another, Cavett explicitly introduced the Apple II as “the original personal computer, easy to own and easy to use,” that “can help you get ahead in life.”⁴⁸ In this fantasy theme, the viewer gets ahead by purchasing an Apple Computer. Through the persona of Cavett, Apple worked to establish that their computer was for everyone with multiple uses. It was a democratic and necessary machine. Commercials featured Cavett alongside the “average American homemaker with her own Apple personal computer” and even Santa Claus. The homemaker happened to be working in gold futures, not storing recipes. The commercial was intended to poke fun at the homemaker stereotype, and in keeping with the tone, Cavett signed off saying, “Apple is the appliance of the 80s for all those pesky household chores.”⁴⁹ The theme of the computer as appliance was used over and over to convey a sense of ease and everydayness. Every Cavett commercial ended by displaying the Apple logo and the phrase “The Personal Computer” on the screen while a voiceover announced “Apple, the personal computer.” The Apple II was not a microcomputer; it was personal. The change in title embodied the fantasy that the computer was intended for an individual; it was an intimate machine.

In 1983, Cavett lost his starring role and the theme of Apple’s television commercials shifted to a focus on portraying Apple users as different and a little rebellious. Apple users replaced Cavett as the subject of the commercials’ fantasy themes. The tagline for these commercials was that soon there would be “two kinds of people: those who use computers and those who use Apples.”⁵⁰ With a single phrase, Apple coopted the fantasy type of the personal computer as a revolution. Revolution was now Apple’s exclusive domain. This could have been a reflection of the appearance of more competitors, including the entry of IBM into the personal

computer market in 1981. With this bold statement, Apple captured the anti-authoritarian fantasy of the hobbyist community, but it was no longer willing to share. Through print and television advertising, Apple created messages that portrayed fantasies of computer ease, utility and revolution to American consumers.

The copy written texts of advertising were supplemented with public relations outreach to journalists. While Apple could not control what journalists would write, McKenna and his team worked hard to influence the message. As with advertising, reaching the non-trade magazines was important to McKenna. He cultivated relationships with journalists at magazines read by more than just computer freaks, such as *Business Week*, *Fortune*, and *Forbes*.⁵¹ In the late 70s, Apple's biggest competitor was Texas Instruments, and McKenna "thought the way to beat TI was with the press. TI had always had an adversarial relationship with the press, and Apple had a chance to develop a friendly relationship. The press was the equalizer."⁵² The "friendly relationship" was built around "confiding secrets,"⁵³ patience and honesty, but also a stream of press releases and countless meetings. No item was too small for a press release. One Apple release trumpeted the "easy to read, well written and illustrated, and entertaining manual for its Apple II computer system."⁵⁴ Even the manual kept with the trouble-free fantasy.

As part of outreach to the press, McKenna, Markkula and Jobs "carted an Apple about New York, plodding from magazine to magazine, waiting in lobbies, lugging the computer up elevators, snatching quick breakfasts with journalists from one magazine before dashing off to keep morning and lunch appointments."⁵⁵ The presence of the computer was intended to provoke journalists to share textual musings with the American public. As a publicist, McKenna hoped that when a reporter saw and interacted with a computer, they would be compelled to write something.

Library Journal published articles with titles like “Making kids computer-wise: Plattsburgh buys Apple II” chronicling libraries who were purchasing and using Apple IIs. A fantasy theme connecting personal computers to personal improvement was being shared. The educational legacy of the People’s Computer Company continued with local libraries inheriting the role that the PCC’s computer center had played in Silicon Valley.

This hyperlocalized coverage was representative of most early press and demonstrated that the arrival of a computer did indeed engender stories, largely in newspapers. “Small newspapers tracked the progress of Apple IIs all across America and greeted the appearance of these personal computers with charming, goggle-eyed astonishment.” A small list of titles included the *Chaska Herald* in Minnesota observing that “Boy Handles Computer Programs,” the *Columbia Independent* in Ohio declaring that “Euclid Junior High School Enters Computer Age,” and the *La Jolla Light* in Southern California reporting that “Computer Ages Comes To Country Day.”⁵⁶

National publications also chined out fantasy themes. In 1980 a *New York Times* journalist wrote a series entitled “The Computer in the Home” about selecting and operating a computer. He explained his decision to purchase an Apple II to readers, and his conclusion captured why the mere presence of a computer could inspire a response: “[T]here is enough that is fun, impressive and even astounding about these machines to make you forge ahead.”⁵⁷ Favorable reviews of the Apple II also appeared in national publications. A 1978 review in *Penthouse* magazine lauded, “The Apple II is, in many people’s opinion, the Cadillac of home computers,” and *Byte* called the machine “one of the best examples of the concept of the complete ‘appliance’ computer.”⁵⁸ The Cadillac metaphor suggested that the Apple II was the best personal computer on the market, perhaps because, as implied by *Byte*, it was as easy to use

as an everyday appliance. Apple engineers' commitment to design was validated by positive reviews.

As evidenced by the reviews, the design of the Apple II was rhetorical; it caused people to take new actions and to write about their experience. Each review gave voice to the material experience of the Apple II's features and choices by its chief engineer, Steve Wozniak. In this section, I analyze the rhetorical work that the computer itself accomplished. At least one of the design choices was the result of a heated debate between Wozniak and Jobs. The controversial feature was peripheral connectors for expandability. Wozniak "was a strong believer in hardware expandability,"⁵⁹ but Jobs felt that expandability just meant increased opportunities for hardware to malfunction. Wozniak won the argument. His persuasive triumph was embodied by the Apple II. The list of Wozniak's stylistic choices were outlined in Apple's 1980 offering memorandum:

Apple II has several features which are not characteristic of competitive products. The most important of these are: 1. Color graphics . . . 2. Four Analog-to-Digital inputs for controllers, sensors or game paddles. 3. Fast, extremely powerful, BASIC programming language . . . 4. Eight peripheral connectors for maximum ease of expandability. 5. Quiet, cool, fan-less operation. 6. True portability in size and weight (less than 11 pounds). 7. Minimum parts count and fully socketed board for maximum reliability and ease of service.⁶⁰

While subsequent Apple computers would not be "expandable," the material agility of the Apple II "quickly spawned a thriving third-party hardware industry."⁶¹ Expandability was connected to potential. Someone who purchased an Apple II might be attracted by the possibility of doing something with the open connectors, and thus, expandability contributed to the flexibility of fantasy surrounding the Apple II.

Taken all together, these features also made the II exciting and easy to use. Wozniak himself had been inspired by The Dazzler, a minicomputer demoed at a Homebrew meeting that could display color. He recalled that "[i]t was so impressive to see colors whirling around. I knew I wanted to do color."⁶² Of course, color created a more resonant gaming experience, as

did all of the features of the Apple II. It was the first computer that could support game paddles. Wozniak was the first to admit that “[a]ll of these features were basically just to play one game, *Breakout*.”⁶³ The effort paid off, as in his autobiography Wozniak shared that “the biggest, earthshaking Eureka moment ever was the day I got *Breakout*, the Atari game, working on the Apple II.”⁶⁴ It was a thrill that would be multiplied many times over as consumers brought Apple IIs into their homes.

Wozniak did not stop with the computer itself, however. Just as influential in the success of the Apple II was the Apple Disk Drive designed by Wozniak and announced at the Consumer Electronics Show in Las Vegas in 1978. Because of the many expansion slots included in the original computer, the disk drive worked with the Apple II and gave Apple the storage lead, meaning that an Apple II was able to access and process more information, or discourse, from a disk than any other computer on the market. Wozniak is remembered as much for his design of the disk drive as he is for the Apple II. Chuck Peddle, designer of the Commodore PET personal computer, recounted: “It absolutely changed the industry,” and Felsenstein was as enthusiastic: “I nearly dropped my pants. It was so clever. I thought, ‘We better keep out of the way of these guys.’”⁶⁵ The design of the disk drive provided a clear statement of who was dominating the personal computer market without saying a word.

The computer and disk drive, however, would have been ineffectual without software programs. Software was the final element that provided the Apple II with rhetorical force by enabling a wider range of fantasy themes. Today, software that solves a need proficiently and assumes market dominance quickly is deemed a “killer application.” In 1979, VisiCalc became the Apple II’s “killer application.” VisiCalc was the first viable spreadsheet program for a computer, and it was available for \$100 solely on Apple for twelve months. In the early 80s,

Fritz Maytag, owner of San Francisco's Anchor Brewing Company, said, "I trust VisiCalc more than my own financial statements. It's just a miracle."⁶⁶ Of 130,000 computers sold by Apple before September of 1980, then Apple President Michael Scott estimated that 25,000 were bought to use VisiCalc.⁶⁷ VisiCalc was not the only third party program supported by Apple. As Moritz explained, "Apple recognized that software would help expand the market for its computer and gave large discounts to programmers who promised to write programs."⁶⁸ Bill Budge, a computer science doctoral student at University of California at Berkeley, traded Apple his first game, Penny Arcade, for a \$1000 printer.

While my analysis is focused on the Apple I, II, and Macintosh computers and the discourse associated with each, ahead of the Macintosh release in January of 1984, an event significant to the public awareness of Apple happened: the company's initial public offering. The financial ups and downs of the company would become the ups and downs of investors and the financial media, including the *Wall Street Journal*. Because its economic success and failure was now linked to a public index, the Dow Jones, Apple became connected within the topology of finance. Ahead of the offering, the company had been running full page ads in the *Wall Street Journal* featuring a picture of Steve Jobs, and the headline "When we invented the personal computer, we created a new kind of bicycle,"⁶⁹ a reference to the "bicycle for the mind" story Jobs had shared internally at Apple. As part of their standard policies the Securities and Exchange Commission required Apple to cancel the ads ahead of their debut so as to not unduly influence investors, but Apple still became the most valuable initial offering since Ford Motor Company in 1956. In a book commemorating the first ten years of Apple, a timeline indicated that the year following the IPO, 1981, "was the year Apple became a household name. Surveys show that public awareness rose from 10 percent to 80 percent in just this one year."⁷⁰

Macintosh

“I wanted something that people would become addicted to.”⁷¹

If awareness of Apple was at 80% ahead of its release, is it possible that the importance of Macintosh has been overstated? I do not think so. Awareness does not translate to cult-like devotion, and that is what Apple set out to achieve with Macintosh. By achieving it, Apple would once again reshape the computer industry. The following remarks by Jobs and Mike Murray, an in-house advertising executive, reflect the goal of Macintosh:

Jobs: We need ads that hit you in the face. They’ve got to have visually high bandwidth. We have an opportunity to do an ad that doesn’t talk about product. It’s like we’re so good we don’t have to show photographs of computers. . . . We don’t stand a chance advertising with features and benefits and with RAMS and with charts and comparisons. The only chance we have of communicating is with a feeling.

Murray: It’s got to be a cult product.⁷²

Jobs’ proclamation that Apple did not “stand a chance advertising with features and benefits and with RAMS” was a radical change from the approach of hobbyists and of advertisements for both the Apple I and II. The desire to create a product rife with emotional excess would be repeated again in meetings, including a meeting with artist Jean-Michael Folon who was commissioned by Jobs to design the original Mister Macintosh.⁷³ Who better to create the mascot of a cult product than an artist? It was the perfect symbol for the artistry of the machine. As with Apple I, and II, design played an important role with marketing in the success of the Macintosh computer. The Macintosh set a standard for both the design and release of a personal computer, but it drew from the same familiar fantasies of Silicon Valley and Apple. With the commercials, the launch, the press coverage, and the narrative, “[t]he basic idea was to create a perception of the Macintosh introduction as an epochal event, by garnering as much attention as we could from every possible venue, coordinated to appear around the time of the introduction at the

shareholders meeting.”⁷⁴ It was a conscious effort by the Apple marketing team to build the impression that a revolution was happening. Macintosh was a supercharged event.

As with the Apple I and Apple II, Macintosh was officially released to a crowd of people, specifically the group that gathered for the 1984 Annual Shareholders Meeting. Note that whenever the computer was mentioned, “the” was dropped, giving “Macintosh” the sense of being a human name; it was the ultimate expression of a computer becoming personal.

Macintosh had taken years to complete, so it was appropriate for Jobs to decide the machine deserved an impressive debut. As remembered by Hertzfeld, Jobs demanded that the Mac play the theme from “Chariots of Fire,” “[p]lus lots of other cool stuff,” which included wanting “Macintosh to be the first computer to introduce itself!”⁷⁵ Macintosh could “talk,” and Jobs wanted it to literally introduce itself to the public. The combination of product tricks and epic storytelling would become the recipe for Silicon Valley launches, but in 1984, the event was singular in its approach to releasing what could have been considered a cold, boring technology. The following excerpts are from Jobs’ presentation revealing Macintosh to Apple shareholders.

Jobs opened the presentation by reading the second verse of Bob Dylan’s song “The Times They Are A-Changin’”:

Come writers and critics
Who prophesize with your pen
And keep your eyes wide,
The chance won’t come again
And don’t speak too soon
For the wheel’s still in spin
And there’s no tellin’ who that it’s namin’.
For the loser now
Will be later to win
For the times they are a-changin’.

The words of Dylan in the context of Macintosh implied that Jobs was inviting journalists (“writers and critics”) to tell the story of Apple, and because it was a story of revolution and

rebellion, winners and losers, the “chance [would not] come again.” The poetry of Dylan, a 60s rebel, was dedicated to a machine that was intended to be the harbinger of something radically new. The song was a concrete connection to the 60s protest roots of the hobbyist computer clubs of San Francisco.

Following the verse and after dispensing with the requisite business of a shareholders’ meeting, Jobs launched into a chronological narrative starting in 1958. On its face, this story followed the development of the personal computer, but it starred IBM as a character missing opportunities and consumed by greed. Year after year, the story took on a sense of inevitability, until Jobs reached present day:

It is now 1984. It appears that IBM wants it all. Apple is perceived to be the only hope to offer IBM a run for its money. Dealers, after initially welcoming IBM with open arms, now fear an IBM dominated and controlled future and are turning back to Apple as the only force who can ensure their future freedom. IBM wants it all, and is aiming its guns at its last obstacle to industry control, Apple. Will Big Blue dominate the entire computer industry? The entire information age? Was George Orwell right?

The 1984 of Cragan and Shields’ speech-writing computer appeared again, but in this fantasy, Apple Computer was the savior. It was a dramatic fantasy theme pitting the evil IBM against the young, rule-breaking Apple—a story in which Apple protected freedom and democracy. Apple was the “only hope.” The imagery even turned violent with the talk of “guns.” At this point in the story, the “1984” commercial, which had premiered a week earlier during the Super Bowl, was shown on a giant screen, and then, Jobs unveiled Macintosh for the first time.

Before walking across the stage, he emphasized, “All of the images you are about to see on the large screen will be generated by what’s in that bag.”⁷⁶ Jobs set an expectation the size of a bag knowing that Macintosh would far exceed that expectation. It was a statement that indicated something never witnessed before was about to happen, and after Jobs inserted a disk, “Chariots of Fire” commenced. As “Macintosh” scrolled across the movie-sized screen in giant,

serified letters, the crowd screamed, cheered, and clapped. The emotional resonance was evidence that the audience was excited by the fantasy of Macintosh possibility. After a series of screenshots of Macintosh applications, Jobs announced: “Now, I would like to let Macintosh speak for itself,” and it said:

Hello, I am Macintosh. It sure is great to get out of that bag! Unaccustomed as I am to public speaking, I'd like to share with you a maxim I thought of the first time I met an IBM mainframe: Never trust a computer that you can't lift! Obviously, I can talk, but right now I'd like to sit back and listen. So it is with considerable pride that I introduce a man who has been like a father to me... Steve Jobs!⁷⁷

In this short speech, Macintosh shared Apple's enemy, touted its own size, and invoked its own saga story by labeling Jobs a “father.” Even if the joke humor was human, the cadence was robotic and a bit awkward. And yet, the auditorium erupted into a standing ovation. The audience got the joke. It was affirmation that Macintosh's humorous message of usability couched in anti-authoritarian (i.e. anti-IBM) fantasies had captured the emotions of everyone present. The audience shared the rhetorical vision of Apple and Silicon Valley. With a human-like capacity for speech and jokes, Macintosh was a computer they wanted to root for in a battle against conformity.

A week earlier during the Super Bowl a commercial had invited the nation also to root for Macintosh. To say it is one of “best-remembered ads in television history,” as custodians of Apple memory once put it, is not an overstatement.⁷⁸ Explaining how the commercial came to be, Steve Hayden, copywriter on the Apple account for the advertising agency, Chiat/Day remembered that Jobs said, ““We want to stop the world in its tracks. I want everybody to know the Macintosh is coming.’ We were thinking, ‘Jesus Christ, how do you stop the world in its tracks?’”⁷⁹ This is how: A young, athletic, blonde woman runs into a gray compound where emotionless citizens sit guarded by police in riot gear. The citizens sit in rigid rows watching a Big Brother-esque figure on an enormous screen droning a message of conformity. Speculation

was that the figure was intended to represent IBM, and given Job's Macintosh launch speech at the shareholders' meeting a week later, speculation appeared correct. The ad climaxed with the spirited blonde slinging a sledge-hammer into the screen; the citizens awakened from their submissive hypnosis. The screen and narrator announced: "On January 27th, Apple Computer will introduce Macintosh. And you'll see why 1984 won't be like '1984'." It was the year foreshadowed by George Orwell, but Macintosh was going to prevent the totalitarian conclusion. The anti-authoritarian values that had once been expressed in hand-drawn illustrations of protestors and words of warning in hobbyist newsletters were now embedded in a million-dollar commercial directed by Ridley Scott and aired during the Super Bowl.

As Regis McKenna later reflected, "At the marketing meetings we also spent a lot of time thinking about words and language. How could we communicate to the public about Mac? We decided we had to create our own vocabulary. Revolutions create their own language."⁸⁰ Even McKenna believed in the revolution. The words that were under discussion are standard today, including mouse, icon, and user interface, but at the time, they were part of a new semiotic system. The idea was simple: create the words that people use to talk about computers, and your computer will become the computer that people talk about. A review in *Byte* demonstrated that a new semiotics was afoot: "Say, for example, we choose the disk by moving the cursor to the disk icon and clicking the mouse button once (figure 1a). The disk 'opens up,' showing a window containing icons, each one of which corresponds to an item on the disk."⁸¹ The level of specificity, including figures of a mouse, suggested that the concepts of a computer desktop were new. There were new symbols for controlling and interacting with a computer.

In support of the Macintosh campaign, Apple invested heavily in print advertising. In March of 1984, Apple inserted a 20-page Macintosh brochure into several magazines.⁸² The

cover of the brochure stated that “only a fraction” of Americans could use a computer, and the first page announced that the Macintosh was “for the rest of us.” It was an odd statement that captured revolution and usability together. If only a fraction of Americans could use a computer, and Macintosh was for everyone else, then Macintosh was for the majority of America. It was democratic, but the use of the phrase “the rest of us” suggested a minority or group of renegades. The brochure went on to demonstrate that it was for the rest of us because it was a computer “so personable it can practically shake hands.”⁸³ The Macintosh was the *personal* computer epitomized. In conclusion, the brochure implored “you really can’t appreciate how insanely great Macintosh is until you bring your index finger to an authorized Apple dealer.” The reference to an “index finger” was meant to reference the new hardware that accompanied Macintosh—the mouse. Even in print, Apple worked to create a physical connection with the user experience of Macintosh.

Independent of advertising, press coverage garnered by an active public relations campaign conveyed the fantasies of Macintosh and tapped into the saga of Apple. Articles appeared in both hobbyist and mainstream publications and often focused on the team. The group that had cultivated the fantasy themes surrounding Macintosh was portrayed as a band of genius pirates out to change the world. Articles described team members as “software artists” and “hardware wizards,” lifting the nontraditional titles from Apple business cards, and depicting the nontraditional Silicon Valley corporate culture to the public.⁸⁴ Hertzfeld shared that “[o]ne of the most sought after goals of the press campaign was to obtain a cover story from either *TIME* or *Newsweek* during the week of the Macintosh launch,” and according to him, the cover of *Newsweek* was secured, then pulled after news of the cover was leaked ahead of publication. The following section is a close reading of the *Newsweek* article.

The article still ran without a dedicated cover, and it had two main fantasy themes. First, Apple and IBM were engaged in a considerable business competition, and second, the team that built Macintosh, and in turn the computer itself, were different. I examine the article here as representative of coverage of the Macintosh launch. The subtitle of the article was: “Steve Jobs is betting the new Macintosh will help win the holy war against IBM.” The language reflected the feeling that it was somehow a battle of good versus evil, a “holy” disagreement. The narrative also drew from the 1960s fantasy type that had associated IBM with white-coated priestly technicians. The article opened with a description of the “1984” commercial and drew the connection that “[t]he fantasy commercial parallels reality, for Macintosh is a dramatic and risky attempt to make a technological end run around behemoth competitor IBM.” An unnamed Macintosh designer was quoted: “We let IBM have big computers; if we let them have personal computers, a creative human resource might have just been fizzled away.” The phrase “creative human resource” implied that computers were necessary. IBM was a threat to human ingenuity. The perspective on the business battle rested on an underlying assumption that personal computers were here to stay; it was just a matter of who was going to dominate the market. Apple was clearly aligned with the rebellious spirit of the hobbyist community. In addition to recounting the “1984” commercial, the article recognized that Macintosh was an “entirely different computer” and recognized the team’s “cherished vision of the personal computer as a tool to save the world.” Tom Swift would have been proud.

The article dedicated multiple paragraphs to the design team, and it tied the team’s philosophy to Apple’s saga. The genesis of Apple contributed to a rhetorical vision of Silicon Valley garage start-ups: “Jobs has launched a campaign to bring back the values and entrepreneurial spirit that characterized Apple in its garage shop days. In developing the

Macintosh, he has tried to re-create an atmosphere in which the computer industry's highly individualistic, talented and often eccentric software and hardware designers could flourish.” Hardware designer Burrell Smith shared that Wozniak's “designs were like poems,” and teammate Chris Espinosa described the atmosphere of the Macintosh team “like an endless cocktail party, with chips and software instead of drinks.” “Pirates over the navy” and “artists ship,” the mission statements shared by Jobs on the Macintosh retreat that reinforced anti-authoritarianism and creativity, even made the story. The conclusion: “Jobs's ‘fantasy’ proved to be a potent development technique.”⁸⁵ The fantasy themes created by Jobs and taken up by the Macintosh team reached the public in the *Newsweek* article. They became accessible resources for a rhetorical vision.

Press was not just about the media. As part of the campaign, celebrities such as Jim Henson, Lee Iacocca, Maya Lin, Ted Turner, Kurt Vonnegut, and Andy Warhol received free Macs.⁸⁶ This group was a blend of artistic geniuses and financial giants, a reflection of the creative and practical potential of Macintosh. As with the Apple II, product reviews from computer magazines were also an integral part of press coverage for Macintosh. Reviews focused on the ease and fun of use. One reviewer captured Apple's strategy succinctly: “[I]t will appeal to the masses of people who have neither the time nor the inclination to embark upon the long learning process...”⁸⁷; while another recognized the considerable press effort: “Considering all the hoopla that has preceded the Mac's introduction, we are still greatly impressed...”⁸⁸ The commercials and media were reaching enthusiasts who were serious enough to write product reviews for computer magazines. A reviewer shared that his eight-year-old was able to operate the computer within an hour; it was “fun.”⁸⁹ Whether they highlighted that it was easy or fun, reviews voiced first hand encounters with Macintosh design. The language of one reviewer was

evidence that design is at its core rhetorical: “In its current form, the Macintosh is the distilled embodiment of a promise: that software can be intuitively easy to use, while remaining just as powerful as anything around . . .”⁹⁰ The phrase “embodiment of a promise” suggested that an object was rhetorical. It made a commitment to a user that instilled trust and shaped action.

The strongest evidence for the rhetorical power of Macintosh was perhaps the development of user groups, gatherings of Macintosh individuals for the purpose of sharing tips. User groups were people who would gather to share both know-how and rumors. Members of user groups would help each other solve technical problems, but also “swap rumors, sometimes accurate, sometimes inaccurate, about what [Apple] was doing next.”⁹¹ User groups, in other words, shared fantasy themes. “Mac societies formed almost immediately. As yet there was no canon, so meetings were sites of spontaneous public avowal and community confirmation.”⁹² User groups were communities that shared affectively-charged communication or small groups that dramatized. The Macintosh was “a new computer, fundamentally different from most others,” and while learning how to use it alone could have been frustrating. The user group founder continued: “[A]s a group our efforts can be fruitful and enjoyable. The key is communication.”⁹³ With their intense, small group exchanges, user groups were rhetorical cousins to the hobbyist clubs of the 60s and 70s. The Berkeley Macintosh Users Group (BMUG) had “its roots in The Hacker Ethic and Berkeley Radicalism.”⁹⁴ In recounting the formation of the Berkeley Macintosh Users Group (BMUG), Stephen Howard explained:

Even people who consider themselves to be ‘power users’ are mostly unaware of what is affecting them. . . . They may worry when vaguely important icons appear in dreams . . . The spirit of the Mac is close, friendly, and warm. It is older than we and though eccentric at times, it possesses an easy grace that speaks quietly of experience. This is the smiling face which attracted so many in the beginning. Most were more refugee than pioneer, and they settled in with the Mac as with a new companion. Computing was familiar sex then; being together was what mattered most.⁹⁵

The language reflected the affective dimension of the encounter with both Macintosh and with other Macintosh users. User are portrayed as being influenced by the computer even in dreams, and the influence is accredited to the “friendly spirit” of the machine as captured by the “smiling face,” a reference to the smiling computer that appeared on the screen whenever Macintosh was booted. The grinning icon had been put there to convey a sense of friendliness. Designer Susan Kare explained, “I designed the boot image— a happy Mac— because we wanted the computer to be friendly. That was a word we tossed around a lot.”⁹⁶ It worked; it was powerful enough to evoke a connection with comfortable sex.

The design of the Macintosh worked. Designers recognized that innovative features functioned in a persuasive capacity. Wozniak, who did not work extensively on Macintosh, still described it as a machine that “spoke to the masses” by carrying “the message that . . . you didn't have to keep computer gibberish in your head.” He understood that through this design “[w]e revived the dream of people mastering technology.”⁹⁷ The design carried the fantasy theme that computers should be user-friendly. The key elements, which were innovations, included a graphical user interface (GUI) and a mouse, but there was also a conscious decision to humanize the machine.

Prior to Macintosh, computers utilized a command-line interface meaning that to do anything on a computer a user would have to type in lines of text commands. Macintosh brought icons, windows and features such as “click to open” to consumers. Dave Morin, a marketing manager with Apple from 2004-2006, became an Apple fan for these reasons: “As far back as my memory goes, I was in love with the Mac: the mouse, the interface, the fonts— the fonts were beautiful— the fact that if you put something in the trash, the can got bigger, and the sound when you emptied it. And the sad Mac face when the computer crashed. It seemed human, like it

had a soul. I still have that computer.”⁹⁸ The computer was responsive; it reinforced your action. It was an intelligent agent as described by Miller in the introduction. Morin’s attention to details such as “beautiful” fonts, sounds, and once again the Mac face evidenced the persuasive power of affect. There was the sound of the trash providing the satisfaction of deleting something unwanted, and the sound upon powering up “sort of like an infant’s first cry, letting the world know that you actually made it here.”⁹⁹ The interplay between a mouse and a screen infused the computer with an energetic element as it traced physical movements across a MacPaint easel or text document.

The thrill of control offered by games was heightened in a thousand little details such as being able to change fonts. But there was also just simplicity, and again the idea that the machine should be “a very friendly computer”. Bruce Horn, a member of the Macintosh team, said:

At the time (and still, in some cases, now) filenames were very restricted, both in length and in format. . . . Filenames were also typically limited to eight characters, not including the suffix; this led to very cryptic naming on other computers, which we definitely wanted to avoid. . . . We decided that we needed to allow users to name their files whatever they wanted, with any characters, including spaces.¹⁰⁰

Designers were working to feel human needs. Nonsensical, hard to remember file names frustrated users; they prohibited a user from employing their natural language. Thus, something as simple as allowing a user to create a complete file name was meaningful. The entire experience was “user-seductive.”¹⁰¹

The Macintosh team designed a computer that was “friendly” for both consumers and software developers. As with the Apple II, the team understood that software provided a computer with utility by increasing the number of actions you could perform on a computer; it was the ultimate argument for engaging with the machine. David Craig, who worked for a company in Wichita that developed Macintosh software, said, “The original Macintosh provided a fascinating development and application environment which I enjoyed immensely.”¹⁰²

Furthermore, Macintosh provided support for software developers in the form of publications and educational sessions. The computer generated specialized discourse. Craig utilized both: “Inside Macintosh [a guide for software developers] was from my perspective very well written and provided in a very readable fashion a structure which made understanding the Macintosh API much easier. . . . Around the end of 1984 I attended a wonderful Macintosh programming seminar called MacCollege.” Apple created semiotic and topological support for developers. There was a guide to the language and a network of seminars. It was a rhetorically robust environment for Macintosh to thrive in. With each new software program came a new use, and with each new use a potential new customer willing to bring home a new Macintosh.

In *TIME* magazine’s “Machine of the Year” issue Rosenblatt wrote:

Inventions arise when they’re needed. This here screen and keyboard might have come along any old decade, but it happened to pop up when it did, right now, at this point in time, like the politicians call it, because we were getting hungry to be ourselves again. That’s what I think, buddy. “The most idealist nations invent most machines.” D.H. Lawrence said that.¹⁰³

The passage implied that computers were needed and that computers were an inevitable expression of both the nation and of individuals. National and individual consciousness were linked to these new machines. This chapter explored the impact of the personal computer on the American public and outlined the role that Apple played in assimilating the personal computer into the national *ethos*. Specifically, the design and marketing of the Apple I, II, and Macintosh were analyzed to demonstrate how the fantasies that started with small gatherings in California became an increasingly accepted vision for the American public. The hardware and software “wizards” of the Apple I, II, and Macintosh created consumer needs by design. Design and marketing ultimately led consumers to engage in fantasy themes that transmitted a valuation of computers as inevitable, revolutionary, democratic, necessary, and usable. These types increasingly coalesced into a rhetorical vision of Silicon Valley. As Apple computers arrived in

the homes of Americans they carried with them the fantasies and ideals that had started their journey in the Free Speech Movement and on Apple retreats. With the help of orchestrated marketing, the stories that had given fuel to ingenuity became part of a rhetorical vision that reinforced a technological need that prior to the creation of each machine had been unknown, yet inevitable.

Chapter 5: Conclusion

On February 16, 2016, Apple Computer made headlines by issuing a public letter refusing to acquiesce to demands from the FBI to create software that would help the government agency unlock smartphones. If you listened closely the demand for “computer power to the people” could be heard echoing through the years in Apple CEO Tim Cook’s assertion that “we fear that this demand would undermine the very freedoms and liberty our government is meant to protect.” In the same letter, Cook recognized that “[s]martphones, led by iPhone, have become an essential part of our lives.”¹ What started as a group of outsiders’ quirky devotion to hardware has evolved into a corporation powerful enough to resist the demands of the United States government. In 2016, Apple Computer still carried the anti-authoritarian flag of the People’s Computer Club, Community Memory, Homebrew and the pirate’s lair. Although the preceding analysis ends with an Apple computer released 30 years ago, it can still help to answer how the outsiders’ computer company earned such rhetorical clout.

This analysis has demonstrated that a dominant rhetorical vision can grow from the devoted fantasies of a few enthusiasts planted in the right environment. Drawing from the counterculture of 1960s San Francisco and the technological resources of Silicon Valley, computer hobbyists adopted an activist mindset inextricably linked to the promise of a personal computer. Stories were told and repeated until they began to motivate action and invention. Apple, in many ways, is the pinnacle of the innovative, revolutionary and entrepreneurial fantasies of Silicon Valley. Today, Apple’s 1983 assertion that soon there will only be “two kinds of people: those who use computers and those who use Apples” is reflected in the answer to the question, “What kind of computer do you use?”² The answer is most often Apple or PC, even though an Apple was the original personal computer (PC). In today’s technological

landscape, there are two types of users: Apple users and PC users. Most often, the PC is an IBM. The enemies persist. The symbolic and material revolutions that sprang from the counterculture of San Francisco appear to be complete.

However, Cook's letter reflects an important, but perhaps, unanswered question of this thesis: what are the implications of a Silicon Valley rhetorical vision and *ethos*? First, collecting the threads of fantasies from throughout the thesis, what is the rhetorical vision and *ethos* of Silicon Valley? Bormann defined rhetorical visions as a collection of accepted fantasy types associated with a particular worldview. Because the personal computer was the first Silicon Valley technology owned by the American public, the rhetorical vision of Silicon Valley draws heavily on the influence of the personal computer. Thus, the Silicon Valley vision includes the acceptance of technological innovation as inevitable, the belief that technology is revolutionary and democratizing for individuals, and that technology solutions are necessary because they lead to better information and solutions. Each of these suppositions is bolstered by the seamless integration of technology into our lives, an integration accomplished by a devotion to design. Alongside the vision is an *ethos* that assigns character to optimism, nonconformity, meritocracy, and data-driven objectivity.

While this project has focused on a short period of time for one Silicon Valley company, Apple's impact on the region's *ethos* is significant. The company developed in the primordial soup of the region's technological birth and through today, exercises a worldwide influence both politically and economically. Furthermore, Apple has been instrumental in the distribution and uptake of personal computing hardware. The accessibility of personal computers, which has culminated in the development of smartphones, has brought unfathomable power to the public and to the companies that build the technology. The fantasy types of revolution, democracy and

necessity have become fused with the actions we take on our computers, and because of this, we valorize the entrepreneurship, innovation, and wealth of Silicon Valley.

One concern of this new *ethos* is data. The farmer featured in chapter four is not content to simply have the data; now, he must protect his pig spreadsheets. The protection of personal data is the ultimate expression of technological character enabled originally by Apple II and VisiCalc. Of course, it could be argued that privacy is a longstanding ethical issue, but the dimension of data is a technological phenomenon. While the preceding chapters explored the symbolic and material dimensions of the revolution and advanced a theoretical perspective, they resisted an ethical judgment on a Silicon Valley *ethos*, which to be clear draws heavily from the technological *ethos* first theorized by Miller. In this conclusion, I suggest ethical implications worth considering. As Langdon Winner wrote, “In our times people are often willing to make drastic changes in the way they live to accord with technological innovation at the same time they would resist similar kinds of changes justified on political grounds. If for no other reason than that, it is important for us to achieve a clearer view of these matters than has been our habit so far.”³ Winner’s argument reflects Miller’s concern that the biggest danger of technology is that its apparent objectivity suggests that it is value-free; it appears to avoid the messy, value-laden arena of politics.

Before considering those matters, I wish to revisit the theoretical work of my research. Bormann’s theory and methodology not only offer a compelling approach to understanding how rhetoric works, but also provide concepts that coalesce with both classical rhetoric’s concern with *ethos* and contemporary theories of affect. In theorizing how a rhetorical community comes to share a rhetorical vision complete with standards for judgment, Bormann provided insights into how *ethos* could develop within a community. It is a process that is fueled by storytelling or

fantasy themes and is abetted by material and affective resources. The process was traced from California hobbyist clubs to a corporation to the American public in this thesis. Because we live in a society increasingly shaped by corporations, SCT and FTA are particularly relevant. As demonstrated by this research, they offer informative tools for dissecting the influence of corporate culture.

By incorporating Lévy's affective dimensions (topology, semiotics, axiology, and energetics), I provided an initial taxonomy for addressing affect from a rhetorical perspective. Reconnecting affect with the classical conception of *ethos* serves a similar end by providing, perhaps, a new way to conceptualize affect— as an embodied set of cultural possibilities that when expressed correctly meet the requirements of a particular *ethos*. Such an approach offers more specificity than simply referring to affect as emotion or bodily sensations. In an interview on the future of affect in cultural studies, Grossberg remarked that “there is a lot of theorizing that does not do the harder work of specifying modalities and apparatuses of affect,” and he emphasized that analyses of affect should attend to the “plane of organization” because “that is what you have to de-territorialize and decode.”⁴ Grossberg concern is that work in affect often does not connect directly with lived experience or explicate how affect generates real world impacts. While this research does not offer a complete mapping of affect, it moves in the direction that Grossberg articulated by proposing a preliminary taxonomy of modalities and by decoding those modalities across an environment of individuals, materiality, an influential corporation and the corresponding communication networks from newsletters to mass media. The diversity of texts addressed mirrors the complexity of such a plane of organization.

In answer to Bormann's question as to why a community of people would “conceive of building machines that would hasten mathematical computation and keep extensive records

accurately, efficiently, and inexpensively,” this thesis suggests that while the Apple personal computer was built to fulfill a fantasy, the fantasy was not mathematical.⁵ The symbolic compulsion was connected to fantasies that were revolutionary and democratic in their depiction of computers against authorities, but material conditions were equally instrumental. Telling people that computers were going to help them fight the man was infinitely more compelling than telling them it would help them with their math homework, at least initially. Wozniak and the early hobbyists were compelled by the existence of mainframe computers to create something more accessible, and the circuit boards and microprocessors of their time both constrained and inspired the machines that they were able to build. Silicon Valley instilled a strong sense that technological achievement was possible, and the ever shrinking materials of the time reinforced these possibilities. When a new machine or microchip was released, it became a benchmark for improvement and a totem of inspiration for other engineers, like Hertzfeld and Smith. If Wozniak had not attended Homebrew and witnessed other hardware, the Apple I may have never been. The physical experience of games, an experience both material and affective, also inspired Wozniak and many developers. The relationship between material and symbolic rhetoric proved not to be linear. Symbolic changes did not always precede the material evolution in technology. Instead, at times a material evolution in technology, such as the invention of the microprocessor, opened the door to new symbolic possibilities, the liberation of personal computing. If Wozniak had not encountered the schematic of a microprocessor, it is possible the Apple I would have never been built regardless of how much he loved computation. The early development of the personal computer was a product of the rhetoric of materials and the rhetoric of symbols. Only when put in the hands of the general public, who had little interest in the material possibilities of building a machine, did the motivation to interact with the machine shift

to software that “empowered” individuals with accurate financial records and mathematical calculations.

Today, the personal computing technology of Silicon Valley has enormous cultural, political, and economic impacts. As Paul Ford quipped in a recent article, “If [computer] coders don’t run the world, they run the things that run the world.”⁶ Ford’s insight reinforced the connection between technology and *ethos*. The Forbes 2015 list of the most powerful people in the world, an “annual lineup of the politicians and financiers, entrepreneurs and CEOs, and billionaire philanthropists who rule the world,” includes several Silicon Valley icons: #10 Larry Page, #17 Jeff Bezos, #19 Mark Zuckerberg, and #27 Tim Cook.⁷ The editors of the list “insist the people on our list wield the kind of power that shapes and bends the world, and moves people, markets, armies and minds.”⁸ To fathom such power may be baffling, but the editors are not speaking in hyperbole. The power is real as demonstrated by Apple’s recent disagreement with the FBI. The impact of computer technology extends beyond back pockets and desktops in part because the wealth computer technology has created shapes public policy, but also because the degree of success achieved by these icons makes them trustworthy and in turn, influential. Here again, the influence is material and symbolic. The *ethos* of the technology itself, the wealth it has created, and the personalities behind its development create a powerful triumvirate that influences the national *ethos*.

G. Thomas Goodnight provides a useful approach for understanding how the influence of Silicon Valley *ethos* may ultimately function argumentatively. Goodnight argues that, “Members of ‘societies’ and ‘historical cultures’ participate in vast, and not altogether coherent superstructures which invite them to channel doubts through prevailing discourse practices.”⁹ Goodnight’s *discourse practices* share commonalities with Bormann’s *communication styles*.

Groups rely on discourse practices to make judgment. Goodnight concludes that discourse practices are categorized into three spheres: personal, technical, and public. These spheres “shape the expectations of interlocutors who engage in the activities of theoretical and practical reasoning.”¹⁰ The personal sphere maintains the lowest evidentiary standards. The technical is the most narrow because it privileges expertise, and the public “is discrete insofar as it provides forums with customs, traditions, and requirements for arguers in the recognition that the consequences of dispute extend beyond the personal and technical spheres.”¹¹ Solutions offered by computer science are favored in the technical sphere, but the public sphere is where the largest changes are enacted. The public sphere should provide the means for those engaged in public deliberation to transcend particular worldviews and the requirements of the personal or technical.

But, as Goodnight’s lamentation over the rise of the technical demonstrates, the public sphere does not always dictate how change is made. The public sphere can be usurped by the personal or the technical because the personal and the technical can advance arguments as to why their standards are the best answer to uncertainty. For example, the technical sphere, as represented by computer science, can argue that statistics derived from big data analysis offer certainty. Cook’s letter to the FBI clearly privileged data and insisted that “this moment calls for public discussion.”¹² Cook called upon the American public to voice their opinions on data protection and privacy. In a somewhat surprising reversal, the technical sphere demanded adjudication by the public sphere. As smartphones and devices such as the FitBit provide the public with ever increasing access to data, it is not farfetched to assume that both data and statistics are increasing in rhetorical heft if only because people want to protect it. Goodnight does not provide an explanation of how technical discourse comes to be privileged. However, as

the influence of a discourse community increases, so does the imperative to understand and critique it, or to quote Goodnight, “If the public sphere is to be revitalized, then those practices which replace deliberative rhetoric by substituting alternative modes of invention and restricting subject matter need to be uncovered and critiqued.”¹³ Tracing the rise of a Silicon Valley *ethos* as embodied by the personal computers of Apple answers Goodnight’s call to critique. To understand how the public sphere may be influenced by such an *ethos* it is important to understand what the *ethos* valorizes.

The fantasy types disseminated by Apple Computer and its machines were that personal computers were (1) possible, (2) revolutionary, (3) democratic, (4) necessary, and (5) user-friendly. Today, the contention that personal computers are possible seems almost archaic, but its derivative that technology is inevitable is powerful. As reflected in the argument of Tim Cook’s letter to the FBI, personal computing technologies continue to align with the people against big government. Apple continues to promote a vision of their products as revolutionary. However, Apple Computer is no longer a reckless upstart; it is routinely ranked as the most valuable company in the world as measured by a market capitalization of over 500 billion dollars. Apple is a company with the power to stand up to the FBI and define matters of public concern, such as privacy. Because of this it is important that the public resist the paradigm outlined by Winner—accepting technological innovation that would otherwise be questioned on political grounds, and instead approach technological innovation from a political perspective. The political implications of technology are easily overlooked when companies, such as Apple, play up their innovative, anti-government roots. The question may appear naïve, but I think it is worth asking, why does our personal data rank as one of the most pressing political concerns of the year?

A commitment to deliberating in the public sphere is eroded by the user-friendly *ethos* of computers. The attention to designing intuitive and responsive user interfaces started with Apple and continues to reach new milestones in responsive machines (think Siri and Amazon Echo). As described by Miller, this “intelligent agent” *ethos* reflected by modern computer technology “addresses us as individual subjectivities rather than as members of the public.”¹⁴ Whether it is “Spacewar,” a smiling Macintosh, or today’s Siri, interactive user interfaces position us as powerful individual actors in control of a technological universe separate from a concerned public. In this way, technology serves to desensitize individuals to the concerns of the public sphere, privileging both the personal and technical sphere simultaneously. This concern was voiced by M.I.T. Computer Professor Joseph Weizenbaum in TIME’s 1983 “Machine of the Year” article. A computer, he argued, “generates a kind of tunnel vision, where the only problems that seem legitimate are problems that can be put on a computer. There is a whole world of real problems, of human problems, which is essentially ignored.”¹⁵ In addition to the perhaps oversized import placed on personal data, a contemporary example of the evolution Weizenbaum’s concern is the Facebook-backed Internet.org, a non-profit organization with “the goal of bringing internet access and the benefits of connectivity to the two-thirds of the world that doesn’t have them.”¹⁶ Facebook’s approach presents internet access, not food scarcity or access to water, as the primary humanitarian concern. The problem has become mere access to the internet because the logical conclusion of a technological *ethos* is that all problems can be solved through a computer. The approach neglects material considerations overlooking that perhaps technology is result of a secure society not vice versa.

Perhaps the most enduring fantasy, though, is the idea that personal computers are necessary. A visual survey of a group of people in a public space will reveal that most cannot go

long without referencing their smartphone for something. Did it start with Dick Cavett explaining why you needed an Apple computer? My contention is yes. Miller suggested that as technology becomes a part of our culture “it fundamentally affects the ways we think and speak and write; it affects, inevitably, what we believe to be ethical.”¹⁷ If the technology is necessary, so must be the functions that it performs. When taken from the perspective of Wozniak and the Apple team the initial impetus for the development of the personal computer was not to crunch data; it was by and large to design the best personal computer with little concern for the end use beyond playing games. On the desk of the American public, however, applications such as VisiCalc demonstrated that computers were adept at processing data. Computers were necessary and well-equipped for calculating numbers, and in turn, computers elevated the importance of numbers for the American public. Rough estimates would no longer do when the precision of a computer was available. Such computational efficiency enhances “the tendency to conceive of the world as a closed system,” and Miller argues that “[o]ne result of this circumscribed consciousness is optimism” because in a closed-system with mathematical precision, all problems appear solvable.¹⁸ Indeed, individuals, such as Jobs and Wozniak, featured in this analysis were quite optimistic.

Taken together, Silicon Valley rhetorical visions of revolution and necessity, enhanced by the materiality of engaging design, has contributed to a revisioning of the American public *ethos*. Apple’s visions are representative of a Silicon Valley *ethos*. It is an *ethos* that sees character reflected in technology, optimism, nonconformity, innovation, and meritocracy. Although my research focuses on Apple and stops in 1984, contemporary Silicon Valley communication and products reflect similar values. Throughout the years, critics, such as Miller, Winner, and Weizenbaum, have warned about the deleterious impact of technology on ethics.

Miller concludes that technology replaces social consensus with the potential for understanding the world objectively through data and computations, and thus, actually eliminates judgments of character. “[T]he concept of *ethos* evaporates—there can be no character to our knowledge or action, other than the idiosyncratic or the mistaken. That loss is the most rhetorically powerful consequence of technology.”¹⁹ Although Miller’s conclusion is dire, as demonstrated by this work, the rhetorical influence of technological innovation is pervasive and fast-moving in part because of its material dimensions. As rhetorical and cultural critics, we cannot overlook the influence of the technological *ethos* in contemporary texts or the Silicon Valley *ethos* in the public sphere.

Notes

Introduction

¹ Ernest G. Bormann, "The Symbolic Convergence Theory of Communication and the Creation, Raising, and Sustaining of Public Consciousness," *The Jensen Lectures: Contemporary Communication Studies* (1983): 71.

² Susannah Fox and Lee Rainie, "The Web at 25 in the U.S.," Pew Research Center, February 27, 2014, accessed March 11, 2016, <http://www.pewinternet.org/2014/02/27/part-1-how-the-internet-has-woven-itself-into-american-life/#>.

³ Monica Anderson, "Technology Device Ownership: 2015," Pew Research Center, October 29, 2015, accessed March 11, 2016, <http://www.pewinternet.org/2015/10/29/technology-device-ownership-2015/>.

⁴ Microcomputer was the original term for a computer that was small enough to be practical for an individual to own and use at home.

⁵ This was the most common nickname for the region before the phrase "Silicon Valley" was used to refer to the same region.

⁶ "Personal computer" was a term popularized by Apple in contrast to microcomputer.

⁷ Ernest G. Bormann, John F. Cragan, and Donald C. Shields, "Three decades of developing, grounding, and using symbolic convergence theory." In *Communication Yearbook*, ed. W. B. Gudykunst (Mahwah, NJ: Erlbaum and the International Communication Association, 2001), 272. The centrality of drama to Bormann's theory is similar to Kenneth Burke's dramatism. However, in reading numerous articles written by Bormann and other SCT scholars, I found no reference to Burke's dramatism. The only reference to Burke is a footnote in which Bormann explains that his "notion" of motives is "not the same as Kenneth Burke's concept as interpreted by Richard E. Crable and John J. Makay" in the article "Kenneth Burke's Concept of Motives in Rhetorical Theory." ("Fantasy and Rhetorical Vision: The Rhetorical Criticism of Social Reality," *Quarterly Journal of Speech* 58:4 (1972): 406.) Throughout my thesis, the use of the word drama and its variations is a reference to the work and theory of Bormann, not Burke.

⁸ Ernest G. Bormann, *The Force of Fantasy: Restoring the American Dream* (Southern Illinois University Press: 2000), 19; Bormann, "Fantasy and Rhetorical Vision: The Rhetorical Criticism of Social Reality," *Quarterly Journal of Speech* 58:4 (1972): 398.

⁹ Bormann, *The Force of Fantasy*, 16-17.

¹⁰ Ernest G. Bormann, John F. Cragan, and Donald C. Shields, "Three decades of developing, grounding, and using symbolic convergence theory." In *Communication Yearbook*, ed. W. B. Gudykunst (Mahwah, NJ: Erlbaum and the International Communication Association, 2001), 276.

¹¹ Robert Freed Bales, *Personality and Interpersonal Behavior*, (New York: Holt, Rinehart and Wilson, 1970).

¹² Ernest G. Bormann, Roxann L. Knutson & Karen Musolf, "Why do people share fantasies? An empirical investigation of a basic tenet of the symbolic convergence communication theory," *Communication Studies* 48:3 (1997): 255, DOI: 10.1080/10510979709368504.

¹³ Bormann, et al., "Three decades," 275.

¹⁴ Ernest G. Bormann, John F. Cragan, and Donald C. Shields, "In defense of symbolic convergence theory: A look at the theory and its criticisms after two decades," *Communication Theory* 4 (1994): 267

¹⁵ Bormann, et al., "Three decades," 274.

¹⁶ Ernest Bormann, "A Fantasy Theme Analysis of the Television Coverage of the Hostage Release and the Reagan Inaugural," *Quarterly Journal of Speech*, 68: 2 (1982), 134.

¹⁷ Ibid.

¹⁸ Bormann, Cragan, and Shields, "In Defense of Symbolic Convergence Theory," 284.

¹⁹ John F. Cragan, and Donald C. Shields, "The Use of Symbolic Convergence Theory in Corporate Strategic Planning: A Case Study," *Journal of Applied Communication Research* 20:2 (1992): 199-218.

- ²⁰ Bormann, Cragan, and Shields, "In Defense of Symbolic Convergence Theory," 283.
- ²¹ *Ibid.*, 284.
- ²² I place rational in quotations because Bormann is not referring to a singular conception of rationality. Instead, he argues that fantasy themes condition discourse communities to evaluate judgments based on shared standards thereby acting as their standard for rational decision making. For example, the Puritans deemed revelations from God as the key to good decision making.
- ²³ Bormann, "Fantasy and Rhetorical Vision," 398.
- ²⁴ Bormann, "Fantasy and Rhetorical Vision," 399.
- ²⁵ Bormann, Cragan, and Shields, "Three decades," 295-97.
- ²⁶ John F. Cragan, and Donald C. Shields, eds. *Applied Communication Research a Dramatistic Approach* (Prospect Heights, Ill.: Waveland, 1981)
- ²⁷ John F. Cragan and Donald C. Shields, "Foreign Policy Communication Dramas: How Mediated Rhetoric Played in Peoria in Campaign '76," *Quarterly Journal of Speech* 63:3 (1977): 274-289; Donald C. Shields and John F. Cragan, "A Communication-based Political Campaign: A Theoretical and Methodological Perspective." *Applied Communication Research: A Dramatistic Approach* (1981): 177-196; John F. Cragan and Donald C. Shields, The Use of Symbolic Convergence Theory in Corporate Strategic Planning: A Case Study," *Journal of Applied Communication Research* 20:2 (1992): 199-218; John F. Cragan, Donald C. Shields, and N. E. Nichols, "Marketing Farm Management Services: An Internal Study," in *Applied Communication Research: A Dramatistic Approach*, eds. John F. Cragan, and Donald C. Shields (Prospect Heights, Ill.: Waveland, 1981): 271-307.
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- ²⁹ John F. Cragan and Donald C. Shields, "Foreign Policy Communication Dramas," 289.
- ³⁰ Donald C. Shields and John F. Cragan, "Media Critique of the Dramatistic Based, Computer Generated, Political Speech," in *Applied Communication Research: A Dramatistic Approach*, eds. John F. Cragan, and Donald C. Shields (Prospect Heights, Ill.: Waveland, 1981): 197-213.
- ³¹ Bob Greene, "A 1979 Computer Gives us People Speak, *S.F. Sunday Examiner & Chronicle*, April 29, 1979, qtd. in Shields and Cragan, "Media Critique," 198.
- ³² Ernest G. Bormann, "The Eagleton Affair: A Fantasy Theme Analysis," *Quarterly Journal of Speech* 59 2 (1973): 143-159.
- ³³ Brian Simmons, "A Fantasy Theme Analysis of Ex-Christians' Online Deconversion Narratives," *Northwest Journal Of Communication* 42:1 (Spring 2014): 117-141. *Communication & Mass Media Complete*, EBSCOhost (accessed March 26, 2016); Aubrie S. Adams, "Needs Met Through Role-Playing Games: A Fantasy Theme Analysis of Dungeons & Dragons," *Kaleidoscope: A Graduate Journal of Qualitative Communication Research* 12, no. 1 (2013): 6; Catherine A. Dobris and Kim White-Mills, "Rhetorical Visions of Motherhood: A Feminist Analysis of the What to Expect Series," *Women and Language* 29:1 (2006): 26.
- ³⁴ Mark West and Chris Carey, "(Re)enacting Frontier Justice: The Bush Administration's Tactical Narration of the Old West Fantasy after September 11," *Quarterly Journal of Speech* 92:4 (2006): 379-412.
- ³⁵ Joshua Gunn, "Refiguring fantasy: Imagination and its decline in US rhetorical studies," *Quarterly Journal of Speech* 89, no. 1 (2003), 50.
- ³⁶ Ernest G. Bormann, John F. Cragan, and Donald C. Shields, "Defending Symbolic Convergence Theory from an Imaginary Gunn," *Quarterly Journal of Speech* 89 (2003): 366-372.
- ³⁷ James Jasinski, "Ethos," *Sourcebook on Rhetoric*. (Sage Publications, 2001): 229-234; James S. Baumlin, "Ethos" in *Encyclopedia of Rhetoric*, Thomas O. Sloane ed. (Oxford University, 2001) accessed online, <http://www.oxfordreference.com.ezproxy.library.unlv.edu/>.
- ³⁸ Baumlin, "Ethos" in *Encyclopedia of Rhetoric*, 5.

- ³⁹ Ibid., 1.
- ⁴⁰ Ibid., 6.
- ⁴¹ William M. Sattler, "Conceptions of Ethos in Ancient Rhetoric," *Communications Monographs* 14:1-2 (1947): 59.
- ⁴² Miller, "Technology as a form of consciousness," 228.
- ⁴³ Ibid., 229.
- ⁴⁴ Ibid.
- ⁴⁵ Bormann, et al., "Three Decades," 274; Bormann, et al. "In Defense of Symbolic Convergence Theory," 268.
- ⁴⁶ Miller, "Technology as a Form of Consciousness," 234-5.
- ⁴⁷ Debra Hawhee, "Bodily Pedagogies: Rhetoric, Athletics, and the Sophists' Three Rs," *College English* (2002): 160.
- ⁴⁸ Melissa Gregg and Gregory J. Seigworth, eds. *The Affect Theory Reader*, (Durham: Duke University Press, 2010), 1.
- ⁴⁹ William Mazzarella, "Affect: What is it Good for?" *Enchantments of modernity: Empire, nation, globalization*, (New York: Routledge Taylor & Francis Group, 2009), 292.
- ⁵⁰ Seigworth and Gregg, *The Affect Theory Reader*, 1.
- ⁵¹ Pierre Lévy, *Becoming Virtual: Reality in the Digital Age* (New York: Plenum Trade, 1998), 133-35.
- ⁵² Joshua Gunn, "Refiguring fantasy: Imagination and its decline in US rhetorical studies," *Quarterly Journal of Speech* 89, no. 1 (2003): 41-59.
- ⁵³ Gunn, "Refiguring fantasy," 51.
- ⁵⁴ Bormann, et. al., "Defending Symbolic Convergence Theory," 368.
- ⁵⁵ Karlyn Kohrs Campbell, "Agency: Promiscuous and protean," *Communication and Critical/Cultural Studies* 2, no. 1 (2005), 1-19.
- ⁵⁶ Campbell, "Agency," 5.
- ⁵⁷ John A. Lynch and William J. Kinsella, "The Rhetoric of Technology as a Rhetorical Technology," *Poroi* 9:1 (2013): Article 13. <http://dx.doi.org/10.13008/2151-2957.1152>.
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- ⁵⁹ Ibid., 72.
- ⁶⁰ Ronald Walter Greene, "Another Materialist Rhetoric," *Critical Studies in Media Communication* 15:1 (1998): 21-40.; Jack Selzer and Sharon Crowley, ed. *Rhetorical Bodies* (Madison, Wis.: The University of Wisconsin Press, 1999).
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- ⁶² Carole Blair, Greg Dickinson, and Brian L. Ott, "Introduction: Rhetoric/Memory/Place," in *Places of Public Memory: The Rhetoric of Museums and Memorials*, ed. Greg Dickinson, Carole Blair, and Brian L. Ott (Tuscaloosa: University of Alabama Press, 2010), 1-54; Greg Dickinson, Brian L. Ott and Erik Aoki, "Spaces of Remembering and Forgetting: The Reverent Eye/I at the Plains Indian Museum," *Communication and Critical/Cultural Studies* 3:1 (Mar. 2006): 27-47; Victoria J. Gallagher and Margaret R. LaWare, "Sparring with Public Memory: The Rhetorical Embodiment of Race, Power, and Conflict in the Monument to Joe Louis," in *Places of Public Memory: The Rhetoric of Museums and Memorials*, ed. Greg Dickinson, Carole Blair, and Brian L. Ott (Tuscaloosa: University of Alabama Press, 2010), 87-112; Langdon Winner, "Do Artifacts Have Politics?" *Daedalus* 109:1 (Winter, 1980): 121-136.
- ⁶³ Jack Selzer, "Habeas Corpus: An Introduction," in *Rhetorical Bodies*, ed. Jack Selzer and Sharon Crowley (Madison, Wis.: The University of Wisconsin Press, 1999), 9.
- ⁶⁴ Lewis Mumford, "Authoritarian and Democratic Technics," *Technology and Culture* 5:1 (Winter, 1964): 1-8; Charles Bazerman, "The Production of Technology and the Production of Human Meaning," *Journal of Business and Technical Communication* 12 (1998): 381-387; Langdon Winner, "Do Artifacts Have Politics?" *Daedalus* 109:1

(Winter, 1980): 121-136; Charles Bazerman, *The Languages of Edison's Light* (Cambridge, Mass.: MIT Press, 1999); Miller, "Technology as a Form of Consciousness."

⁶⁵ Miller, "Technology as a form of consciousness," 228.

⁶⁶ Bazerman, "The Production of Technology," 383.

⁶⁷ *Ibid.*, 384.

⁶⁸ *Ibid.*

⁶⁹ *Ibid.*

⁷⁰ *Ibid.*

⁷¹ Bazerman, *The Languages of Edison's Light*, 350.

⁷² *Ibid.*, 2.

⁷³ *Ibid.*, 333.

⁷⁴ Bormann, "Fantasy and Rhetorical Vision," 401.

⁷⁵ Michael Calvin McGee, "Text, Context, and the Fragmentation of Contemporary Culture," *Western Journal Of Speech Communication* 54: 3 (Summer 1990): 274-289. Communication & Mass Media Complete, EBSCOhost (accessed March 13, 2016).

⁷⁶ *Ibid.*, 288.

⁷⁷ *Ibid.*, 283.

⁷⁸ I consider them rhetorically significant because of their relative impact on a public.

⁷⁹ Andy Hertzfeld, e-mail message to author, March 12, 2016.

⁸⁰ Bormann, et al., "Three decades," 301.

Chapter 2

¹ Stephen Wozniak, "Homebrew and How the Apple Came to Be," *AtariArchives.org*, http://www.atariarchives.org/deli/homebrew_and_how_the_apple.php.

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⁴ David A. Kaplan, *The Silicon Boys and Their Valley of Dreams* (New York: William Morrow and Company, Inc., 1999), 18-19.

⁵ Michael Moritz, *The Little Kingdom*, (New York: William Morrow and Company, Inc., 1984), 65-66.

⁶ *Ibid.*, 170-71.

⁷ Lévy, *Becoming Virtual*, 85.

⁸ Stuart Leslie, "The Biggest 'Angel' of Them All: The Military and the Making of Silicon Valley," in *Understanding Silicon Valley: The Anatomy of an Entrepreneurial Region*, ed. Martin Kenney (Stanford, Ca.: Stanford University Press, 2000).

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¹⁰ Lee et al., "The Silicon Valley Habitat," 2.

¹¹ Miller, "Technology as a form of consciousness," 228.

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- ¹⁹ Martin Kenney, "Introduction," in *Understanding Silicon Valley: The Anatomy of an Entrepreneurial Region*, ed. Martin Kenney (Stanford, Ca.: Stanford University Press, 2000), 4.
- ²⁰ Gene Bylinsky, "California's Great Breeding Ground For Industry," *Fortune*, June 1974, 129; Ibid., 131.
- ²¹ Mainframe computers are large computers typically owned by the government or corporations.
- ²² James Wallace and Jim Erickson, *Hard Drive: Bill Gates and The Making of the Microsoft Empire* (New York : Wiley, 1992), 86.
- ²³ Theodore H. Nelson, *Computer Lib*, 1974, 2, accessed February 6, 2016, <http://blog.stummkonzert.de/wp-content/uploads/2012/12/Ted%20Nelson%20-%20Computer%20Lib%20-%20Dream%20Machine.pdf>.
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- ²⁵ Paul Freiberger and Michael Swaine, *Fire in the Valley: The Making of the Personal Computer* (Berkeley: Osborne/McGraw-Hill, 1984), 57.
- ²⁶ This transition can be attributed to the fact that the first computer programming courses at MIT were offered in the Electrical Engineering Department. See Levy, *Hackers*, 11-12.
- ²⁷ Steven Levy, *Hackers: Heroes of the Computer Revolution* (Beijing: O'Reilly, 2010), 27
- ²⁸ The *Whole Earth Catalog* was quoted by Steve Jobs in his Stanford commencement address.
- ²⁹ Stewart Brand, "Spacewar: Fanatic Life and Symbolic Death Among the Computer Bums," *Rolling Stone*, December 7, 1972, accessed February, 9, 2016, http://www.wheels.org/spacewar/stone/rolling_stone.html.
- ³⁰ Levy, *Hackers*, 49.
- ³¹ Brand, "Spacewar."
- ³² ARPA was officially renamed the Defense Advanced Research Projects Agency (DARPA) in 1972.
- ³³ Levy, *Hackers: Heroes of the Computer Revolution*, 151.
- ³⁴ Freiberger and Swaine, *Fire in the Valley*, 99.
- ³⁵ Robert Cohen and Reginald E. Zelnik, eds. *Free Speech Movement: Reflections on Berkeley in the 1960s* (Berkeley: University of California Press, 2002) ProQuest ebrary. Web. Accessed September 9, 2015, 119.
- ³⁶ Ibid., 222.
- ³⁷ Ibid., 223.
- ³⁸ Levy, *Hackers*, 165.
- ³⁹ *People's Computer Company*, October 1972, <http://www.digibarn.com/collections/newsletters/peoples-computer/peoples-1972-oct/index.html>.
- ⁴⁰ Ibid.
- ⁴¹ Levy, *Hackers*, 170.
- ⁴² Levy, *Hackers*, 152.
- ⁴³ Levy, *Hackers*, 176.
- ⁴⁴ Ibid., 171.
- ⁴⁵ Ibid., 177.
- ⁴⁶ Accounts suggest that Albrecht was convinced that hardware was too difficult, and thus, would distract from PCC's mission to educate people on how to use a computer and undermine proclamations that computers were easy.

⁴⁷ Moritz, *The Little Kingdom*, 104.

⁴⁸ Doug Henton, "A Profile of the Valley's Evolving Structure," in *The Silicon Valley Edge: A Habitat for Innovation and Entrepreneurship*, ed. Chong-Moon Lee et al. (Stanford, Ca.: Stanford University Press, 2000), 47.

⁴⁹ I use the term "consciousness-raising" as a concept from symbolic convergence theory, not feminist scholarship. While he borrowed the term from 60s political movements, including feminism, Ernest Bormann used the term to refer to communication utilized by groups to recruit and convert new members.

⁵⁰ The first personal computer, the Altair, was programmed through metal on/off switches on the front control panel. There was no screen, just flashing lights. Accounts of working with the Altair often mention the hours it would take to program and run a simple addition program.

⁵¹ Levy, *Hackers*, 204.

⁵² I use dramatization here in the context of Symbolic Convergence Theory.

⁵³ Wozniak, "Homebrew and How the Apple Came to Be."

⁵⁴ "Homebrew Computer Club Newsletter," March 15, 1975,

http://www.digibarn.com/collections/newsletters/homebrew/V1_01/index.html.

⁵⁵ Wozniak, "Homebrew and How the Apple Came to Be."

⁵⁶ "Homebrew Computer Club Newsletter," March 15, 1975.

⁵⁷ "Homebrew Computer Club Newsletter," April 12, 1975,

http://www.digibarn.com/collections/newsletters/homebrew/V1_02/index.html.

⁵⁸ "Homebrew Computer Club Newsletter," April 12, 1975.

⁵⁹ "Homebrew Computer Club Newsletter," May 10, 1975,

http://www.digibarn.com/collections/newsletters/homebrew/V1_03/index.html.

⁶⁰ "Homebrew Computer Club Newsletter," June 7, 1975,

http://www.digibarn.com/collections/newsletters/homebrew/V1_04/index.html.

⁶¹ "Homebrew Computer Club Newsletter," February 16, 1977,

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⁶² Steve Wozniak, *iWoz: Computer Geek and Cult Icon, How I Invented the Personal Computer, Co-Founded Apple, and Had Fun Doing It* (New York: W.W. Norton & Company, 2006), 48.

⁶³ Wozniak, "Homebrew and How the Apple Came to Be."

⁶⁴ Owen W. Linzmayer, *Apple Confidential 2.0: The Definitive History of the World's Most Colorful Company* (San Francisco: No Starch Press, 2004), 12; Freiburger and Swaine, *Fire in the Valley*, Epilogue; E. Floyd Kvamme, "Life in Silicon Valley: A First-Hand View of the Region's Growth," in *The Silicon Valley Edge: A Habitat for Innovation and Entrepreneurship*, ed. Chong-Moon Lee et al. (Stanford, Ca.: Stanford University Press, 2000), 70-71.

Chapter 3

¹ Susannah Fox and Lee Rainie, "The Web at 25 in the U.S.," Pew Research Center, February 27, 2014, accessed March 11, 2016, <http://www.pewinternet.org/2014/02/27/>.

² Steve Wozniak, "How we failed Apple," *Newsweek*, February 19, 1996, 48.

³ Bazerman, "The Production of Technology," 384.

⁴ Max Chafkin, *Design Crazy: Good Looks, Hot Tempers, and True Genius at Apple*, (2014-08-01). (Kindle Location 44). Fast Company. Kindle Edition.

⁵ Bazerman, "The Production of Technology," 385.

⁶ George W. Beahm, *I, Steve: Steve Jobs in His Own Words*, (Ebooks Corporation, 2011), 38.

⁷ Andy Hertzfeld, "The Macintosh Spirit," *Folklore*, http://www.folklore.org/StoryView.py?project=Macintosh&story=The_Macintosh_Spirit.txt.

⁸ I, Steve, Apple event for iPad 2, 2011.

⁹ Grok is a word often used by computer engineers meaning to thoroughly understand a problem. Jobs used this word in his interview with *Wired*: "You have to really grok what it's all about."

- ¹⁰ Bug hunts are the gathering of a group for the purpose of finding problems with software or hardware. ;See Appendix for images of invites to corporate events; Andy Hertzfeld, “Real Artists Ship,” *Folklore*, http://www.folklore.org/StoryView.py?project=Macintosh&story=Real_Artists_Ship.txt.
- ¹¹ Bormann, “The Symbolic Convergence Theory of Communication and the Creation, Raising, and Sustaining of Public Consciousness,” 88.
- ¹² Hertzfeld, “90 Hours A Week and Loving It,” http://www.folklore.org/StoryView.py?project=Macintosh&story=90_Hours_A_Week_And_Loving_It.txt.
- ¹³ *Ibid.*
- ¹⁴ Hertzfeld, “Steve Capps Day,” http://www.folklore.org/StoryView.py?project=Macintosh&story=Steve_Capps_Day.txt.
- ¹⁵ Hertzfeld, “Moustache,” <http://www.folklore.org/StoryView.py?project=Macintosh&story=Moustache.txt>.
- ¹⁶ Freiburger and Swaine, *Fire in the Valley*, 102; Levy, *Hackers*, 182.
- ¹⁷ *Hackers*, 180.
- ¹⁸ Wozniak, *iWoz*, 25.
- ¹⁹ Wozniak, *iWoz*, 88.
- ²⁰ *Ibid.*, 99.
- ²¹ APPLE COMPUTER INC. Preliminary Confidential Offering Memorandum, 1980, <http://archive.computerhistory.org/resources/text/2009/102712693.05.01acc.pdf>.
- ²² Wozniak, *iWoz*, 150.
- ²³ *Ibid.*, 155-156.
- ²⁴ *Ibid.*, 167.
- ²⁵ *Ibid.*, 157.
- ²⁶ Beahm, *I, Steve*.
- ²⁷ *Ibid.*, 168,
- ²⁸ Wozniak, *iWoz*, 170.
- ²⁹ *Ibid.*, 172.
- ³⁰ Moritz, *The Little Kingdom*, 142.
- ³¹ Linzmayer, *Apple Confidential 2.0*, 7.
- ³² Beahm, *I, Steve*.
- ³³ Hertzfeld, “The Father of the Macintosh,” *Folklore*, 2003, http://www.folklore.org/StoryView.py?project=Macintosh&story=The_Father_of_The_Macintosh.txt.
- ³⁴ Hertzfeld, “We’ll See About That,” http://www.folklore.org/StoryView.py?project=Macintosh&story=Well_See_About_That.txt; Smith was ultimately promoted and became crucial to the final design of the Macintosh.
- ³⁵ Hertzfeld, “Steve Wozniak University,” http://www.folklore.org/StoryView.py?project=Macintosh&story=Steve_Wozniak_University.txt.
- ³⁶ Linzmayer, *Apple Confidential 2.0*, 12.
- ³⁷ Beahm, *I, Steve*.
- ³⁸ Hertzfeld, “Donkey,” <http://www.folklore.org/StoryView.py?project=Macintosh&story=Donkey.txt>.
- ³⁹ Beahm, *I, Steve*.
- ⁴⁰ Hertzfeld, “The Macintosh Spirit,” http://www.folklore.org/StoryView.py?project=Macintosh&story=The_Macintosh_Spirit.txt.
- ⁴¹ *Ibid.*, http://www.folklore.org/StoryView.py?project=Macintosh&story=The_Apple_Spirit.txt.
- ⁴² *Ibid.*
- ⁴³ Hertzfeld, “The Apple Spirit,” http://www.folklore.org/StoryView.py?project=Macintosh&story=The_Apple_Spirit.txt.

- ⁴⁴ Ibid.
- ⁴⁵ Hertzfeld, "Apple II Mouse Card," http://www.folklore.org/StoryView.py?project=Macintosh&story=Apple_II_Mouse_Card.txt
- ⁴⁶ Ibid.
- ⁴⁷ Hertzfeld, "Nybbles," <http://www.folklore.org/StoryView.py?project=Macintosh&story=Nybbles.txt&sortOrder=Sort+by+Date>
- ⁴⁸ Hertzfeld, "Five Different Macs," http://www.folklore.org/StoryView.py?project=Macintosh&story=Five_Different_Macs.txt
- ⁴⁹ Localization is a design that makes it very easy for a computer to be used in different countries; Bruce Horn, "The Grand Unified Model," *Folklore*, http://www.folklore.org/StoryView.py?project=Macintosh&story=The_Grand_Unified_Model.txt
- ⁵⁰ Hertzfeld, "Reality Distortion Field," http://www.folklore.org/StoryView.py?project=Macintosh&story=Reality_Distortion_Field.txt.
- ⁵¹ Ernest G. Bormann, Roxann L. Knutson, and Karen Musolf, "Why do people share fantasies? An empirical investigation of a basic tenet of the symbolic convergence communication theory," *Communication Studies*, 48:3, (1997): 254-276, DOI: 10.1080/10510979709368504.
- ⁵² Linzmayer, *Apple Confidential 2.0*, 95.
- ⁵³ Chafkin, *Design Crazy*, Kindle Locations 149-150.
- ⁵⁴ Ibid., Kindle Locations 83-84; This story is technically not true. The ad ran ahead of their IPO, but the SEC required the ad be withdrawn ahead of their IPO.
- ⁵⁵ Ibid., Kindle Locations 86-87.
- ⁵⁶ Ibid., Kindle Locations 143-144.
- ⁵⁷ Hertzfeld, "Signing Party," http://www.folklore.org/StoryView.py?project=Macintosh&story=Signing_Party.txt.
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Chapter 4

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Conclusion

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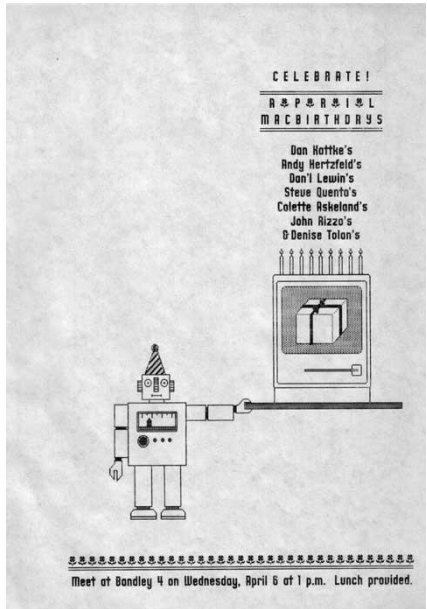
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Appendix



These invitations to Apple corporate events demonstrate that group gatherings were valued and promoted with imagery created on the very machine the company was working to build. All images were created by Susan Kare, a Macintosh interface and font designer, using the newly created software MacPaint. Source *Folklore*, http://www.folklore.org/StoryView.py?project=Macintosh&story=MacPaint_Gallery.txt.

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Curriculum Vitae
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Education

M.A.: University of Nevada, Las Vegas, May 2016
Department of Communication Studies, Program in Rhetoric

B.A.: Wellesley College, May 2001
Major: American Studies
Minor: Education

Presentations

“Gaga: Ms. Germanotta’s Model for Liberation from the Crisis of Dada.” Paper on panel competitively selected by the Far West Popular Culture and American Culture Association Meeting, Las Vegas, 2010.

Awards and Honors

2015 Semifinalist in Rebel Grad Slam: 3-Minute Thesis Competition

Service

University Service, University of Nevada, Las Vegas

Founder and President of Rebel Rhetors, UNLV Chapter of the Rhetoric Society of America, 2015-2016

Department Representative, Graduate and Professional Student Association, 2014-2015

University Service, Wellesley College

Manager of Campus Pub, 2000-2001

Director of On-Campus Affairs and Member of Student Senate Cabinet, 1999-2000

Resident Advisor, 1998-1999

Dorm Representative, Student Senate, 1997-1998

Community Service

Docent, The Neon Museum, Las Vegas, NV 2008-2009

Membership in Professional Organizations

Rhetoric Society of America