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From the Invisible Hand to Joined Hands

But for the personal computing movement, there would be no Apple. Nearly all of the technical aspects associated with personal computing—small computers, microprocessors, keyboard-based interfaces, individual usability—were available in 1972. As early as 1969, Honeywell had released the H316 “Kitchen Computer” priced at \$10,600 in the Neiman Marcus catalog, and in 1971 John Blankenbaker had introduced the Kenbak-1 priced at \$750 and Steve Wozniak and Bill Fernandez had built their Cream Soda Computer—so named because they drank Cragmont cream soda as they built the computer with chips discarded by local semiconductor companies.

But the idea of using computers as personalized tools that augmented the autonomy of individuals only took root because of the efforts of hobbyists and engineers.¹ According to some, the first shot of the personal computing movement was in 1966 when Steven Gray founded the Amateur Computing Society and published a newsletter for hobbyists, which became a model for hobbyist clubs around the country. At that time, large firms such as IBM or DEC were dedicated to a centralized conception of computing in which the mainframe was tended by a priesthood of managers, engineers, and operators who prevented users from touching and working with the computer. Their focus effectively blinkered them to the other possibilities—that fans and tinkerers

should have access and that they could in fact make a bundle by serving that market. As one historian of computing noted, “The most rigid rule was that no one should be able to touch or tamper with the machine itself. This, of course, was what these people (fans) were dying to do more than anything in the world, and the restrictions drove them mad.”²

The *People’s Computer Company*, a bi-monthly newsletter, was started in 1972 and claimed that “computers are mostly used to control people instead of to *free* them . . . it is time to change that.”³ The *People’s Computer Company* soon had a circulation of 8,000 and later featured a comic strip built around the characters F-Man and Billy Basic, parodying the programming language Fortran and Bill Gates. In 1974 Ted Nelson, who had founded Project Xanadu in 1960 with the goal of creating a computer network with a simple user interface, published his book *Computer Lib/Dream Machines*, an evangelical appeal for computing to be made available to all without complications or servility. Soon, the first kit-computer, the Altair, priced at \$397, was featured on the cover of the January 1975 issue of *Popular Electronics*. Later, the *People’s Computer Company’s* cover showcased the Altair.

A few months later, in March 1975, two members of the People’s Computer Company, Gordon French and Fred Moore, founded the Homebrew Computer Club in Menlo Park, California. Those who assembled were fans or hobbyists who made personal computers for personal consumption on a small scale, and the name Homebrew symbolized their approach—to go out and claim technology and adjust its recipe to meet personal needs. It also represented a sense of camaraderie, a chance to gripe and to bask in friends’ ac-

claim, an opportunity to pool knowledge, to share techniques and know-how. The Homebrew Computer Club allowed the enthusiasts to express themselves, to be who they really were. The first meeting attracted other enthusiasts, and in December 1975 Mountain View saw the establishment of the first Byte shop to sell components to hobbyists. Soon, other Homebrew clubs were started elsewhere in the United States, quickly becoming spawning grounds for inventors and for founders of companies such as Apple, as well as for developers of programs and games. This groundswell finally woke up IBM and other manufacturers, establishing the market for personal computers and making it possible for larger firms to then enter the market.

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But for the deaf rights movement, cochlear implants could have transformed the world for deaf children under the age of five. Unlike other hearing aids that amplify sound, the cochlear implant stimulates auditory nerves. Sometimes referred to as the “bionic ear,” the implant was thought of by its makers as a cure for deafness because children who used it could easily acquire language skills and become assimilated into society. Thus, from their point of view, the bionic ear was a device that could transform a deaf person from disabled to “normal.”

Manufacturers of cochlear implants were surprised when the National Association of the Deaf spearheaded a social movement challenging the depiction of the deaf as disabled and instead arguing that the deaf were a minority culture with a distinct identity and language that was being op-

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pressed by the majority “hearing culture.” A telling illustration of the deaf community’s perspective on cochlear implants was a cartoon in *Silent News*, the national deaf newspaper, by Bruce Hanson, which showed a jackboot labeled “Hearing” crushing small figures named “Deaf.” Deaf activists painted the cochlear implant as a tool of cultural genocide, an innovation that presaged the loss of sign language and the destruction of the deaf community if cochlear implants were used in young deaf children. In France, for example, a deaf coalition called *Sourds en Colere* (Deaf Anger) organized demonstrations against doctors who promoted cochlear implants. In the United States, deaf pride activists lobbied state legislatures, filed suits for the protection of the rights of deaf parents, and pushed for the regulation and restriction of cochlear implants for young children.



What’s going on in these two examples? What could the personal computer revolution and the marketing failure of the cochlear implant have to do with one another? Both cases feature radical business innovation that takes the shape of new technologies that challenge existing interests, norms, and values because they disrupt an existing technological trajectory and introduce a brand-new set of performance features to consumers. Most important, radical innovations transform social practices and social relationships and, hence, challenge existing norms and presuppositions. If the personal computer *personalized* computing, the bionic ear signaled the end of sign language and the culture built around it.⁴

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In both cases, market rebels, that is, activists who challenged the status quo, played an important role. Hobbyists rebelling against centralized computing and deaf rights champions challenging business firms sparked organized collective endeavors to protect a sense of self—an identity. Radical innovations such as the hybrid car by Toyota succeeded in part because market rebels spearheading the environmental movement had paved the way by arousing collective enthusiasm for “green” causes among consumers and regulators. By contrast, radical innovations such as the Segway floundered because they overlooked the social and cultural mobilization of their targeted consumers by activists.

Despite this, academics who address the question of how markets work, mostly economists and sociologists, have glossed over the role of social movements in shaping radical innovation in markets.⁵ Since Adam Smith wrote his treatises in the late eighteenth century, economists have tended to see markets as guided by an invisible hand, wherein individuals acting in their self-interest enhance collective welfare even if it is not their intention to do so. In this focus, economists have largely neglected to understand how the *joined hands* of activists and their recruits make or break radical innovation in markets. Ironically, although sociologists have pioneered the study of social movements, the bulk of their research concerns social movements directed against the state or movements designed to change popular culture, such as large-scale revolutions, civil rights movements, and the women’s movement. For the most part, students of technological innovations have treated them as shocks to a market rather than as the outcomes of collective action.⁶

■ Shaping the Market

Scholars and practitioners of marketing innovations have treated the diffusion of innovations as an epidemic whereby contact with a prior adopter induces others to adopt the innovation. However, they often overlook the distinction between simple contagion and complex contagions. Diseases usually entail simple contagion in which *multiple exposures to a single source* is sufficient to spread the disease. For incremental innovations where the costs of adoption are low, simple contagions suffice. By contrast, for radical innovations where the costs of adoption are high because adopters have to topple existing conventions, complex contagions featuring *exposure to multiple sources* are a prerequisite.⁷

The metaphor of an epidemic is an attractive device to use to understand the spread of an innovation, but it relies on the logic of spontaneous combustion—you catch fire when a neighbor catches fire—yet says little about how the neighbor catches fire in the first place. The problem is all the more acute in the case of complex contagions where we need to understand how the multiple sources caught fire. This is where market rebels play a crucial role.

How do the joined hands of market rebels and their recruits shape radical innovation in markets? Political scientists suggest that market rebels, or activists, supply information about firms to consumers through attention-grabbing tactics ranging from picket lines and strikes to certifying the producers who meet their criteria (for instance, the caption “dolphin safe” on tuna cans).⁸ Market rebels forsake public politics for private politics, targeting individual firms by or-

ganizing campaigns that promise a reward if the firm complies or threaten a penalty if it does not. In response, firms build their reputations to deter counterattacks.⁹

This is undoubtedly true. But the political science perspective treats market rebels as critics who supply *information* while overlooking how they mobilize collective action by harnessing the power of identity. Picketing and other signals are important, but the Homebrewers wanted to do more than force IBM to change; they wanted to play and engage. The deaf rights community sought to do more than just picket cochlear implant makers; they wanted to defend deaf culture.

Social movements are collective endeavors to initiate social change, and they arise to reshape markets when normal incentives are inadequate and when actors are excluded from conventional channels of redress to address social costs.¹⁰ The challenge for market rebels becomes how to forge a collective identity and mobilize support by articulating a *hot cause* that arouses emotion and creates a community of members, and relying on *cool mobilization* that signals the identity of community members and sustains their commitment.

The metaphors of heating up and refreezing are central to the ideas of Kurt Lewin, a psychologist who conceived of social change as a three-step process: unfreezing group life from its current level, moving it to a new level, and refreezing group life at the new level to prevent backsliding.¹¹ Activists face what can be called a “B2B” dilemma: should one concentrate on changing beliefs first or modifying behavior first? Are beliefs the cause of behavior or their consequence?

But this preoccupation with beliefs or behaviors under-

cuts the role of emotions and the processes of heating and cooling in social change. Indeed, emotions underlie beliefs and behaviors. A number of social psychological studies highlight “hot cognition”—cognitive cues trigger feelings, and in turn, feelings activate stored knowledge and memories.¹² Other studies reveal that behaviors are “emotional accomplishments”—thus Arlie Hochschild, a sociologist at the University of California–Berkeley, argues that feeling rules or norms govern the expression of behavior in service settings, and that the same behavior is reconstituted when it is infused with different feelings.¹³

How do emotions bridge the belief-versus-behavior debate? How do they trigger social change? The neglect of emotions in social change is all the more surprising given that activists who seek to mobilize the marginal and the powerless largely rely on emotions. *Hot causes* promote unfreezing and changing because they emit new cues that awaken new feelings that interact with the emotions tied to old but relevant beliefs and induce dissonance. *Cool mobilization* contributes to moving and refreezing because it promotes new behaviors, creating new social experiences and affirming new concepts, identities, and commitments. Hot causes and cool mobilization overcome the “B2B” dilemma; hot causes mobilize passions and engender new beliefs, and cool mobilization triggers new behavior and allows new beliefs to develop. Together, they foster the development of new identities and the defense of old ones.

In the personal computing movement, the hot cause was the tyranny of the central computer; the cool sources of mobilization were hobbyist clubs and, arguably, the personal

computer itself. Early rebels took computers to the streets by establishing the first community bulletin board with remote terminals placed in a small shopping area where individuals could come in and operate the terminals and do anything they wanted. These early bulletin boards enabled them to recruit others to the hobbyist clubs and, in turn, spawn more rebels who experimented with making computers from kits. In the deaf rights movement, the hot cause was the cochlear implant—billed as a tool of genocide. The cool mobilization was through deaf rights groups that used unconventional techniques to arouse public interest. Consider one episode of the deaf rights movement in France that was emblematic of the hot cause and cool solution. On October 16, 1996, Sourds en Colere organized a demonstration in the medical university of Lyon, which was hosting a conference on cochlear implants. The demonstrators mobilized six hundred people by placing posters where deaf people were likely to see them (schools, deaf organizations), disrupted the conference and gained television coverage at noontime, performed mime skits depicting rapacious doctors performing operations on blood-covered children, and watched a young man hammer the microphone used in a cochlear implant. These techniques of cool mobilization were improvisational, experimental, and insurgent methods of disavowing the cochlear implant and affirming one's own deaf identity.

■ Hot Causes

The challenge for activists is to arouse to action individuals who are usually busy, distracted, uninvolved, or apparently

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powerless. Hot causes permit arousal because they frame reality. How specifically do hot causes arouse emotions? Social psychologists John Jost and Mahzarin Banaji contend that powerless individuals perpetuate their situation through a number of system-justifying myths that reinforce inertia; they may see their subordinated position as being legitimate, believe that higher status groups are more desirable, and accept their fate as inevitable, or subscribe to widely shared stereotypes.¹⁴ How are the powerless awakened? How are the disinterested motivated to take action? My Stanford colleagues Deb Gruenfeld and Lara Tiedens have shown in separate studies that emotions of power and powerlessness activate different behaviors: feelings of high power trigger assertive and confident behaviors, whereas feelings of powerlessness exacerbate withdrawal behaviors. Positive feelings such as pride and negative feelings such as anger can trigger a high sense of power.¹⁵

So hot causes arouse pride or anger and impel individuals to invest time and energy. A useful refinement is provided by the sociologist James Jasper, who distinguishes between reciprocal emotions and shared emotions.¹⁶ Reciprocal emotions consist of the feelings of movement participants for each other, such as friendship and solidarity. Shared emotions are also held by movement members but the object is *outside* the movement—an external threat or enemy. Both reciprocal and shared emotions reinforce each other. Alternately, shared feelings of respect for an external group such as customers create reciprocal feelings of pride. A classic example is the quality movement that transformed the American automobile industry—this example is classic be-

cause one would expect quality improvements to be undertaken by firms because of normal profit incentives. However, American automobile producers overlooked quality and initially disregarded Japanese innovations concerning quality circles. It was only after a threat was named—the death of the American automobile industry—that quality activists were able to mobilize support for quality institutes and initiatives. The establishment of the Baldrige Award also provided encouragement to the quality movement and led to the restoration of pride in American manufacturing. Thus, hot causes are effective at fostering deep shared and reciprocal emotions when they fit with everyday life experiences of participants and resonate with deeply held cultural narratives.

■ Cool Mobilization

If words are important for the transfer of ideas, nonverbal cues are essential to the transfer of feelings. A number of studies have demonstrated that the diffusion of emotion requires face-to-face contact. It involves little deliberate and purposive processing of information and instead occurs automatically.¹⁷ Like hot causes, cool mobilization activates emotion and enables the formation of new identities, but it does so by engaging audiences in new behaviors and new experiences that are improvisational and insurgent.

The origins of “cool” can be traced to jazz musicians who were revolting against the legacy of Louis Armstrong, who along with his band had become synonymous with “hot jazz.” Rebels such as Charlie Parker, Dizzy Gillespie, and Miles Davis saw themselves as belonging to a distinct social

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group—they spoke slang, wore Ivy League clothing, and, according to some observers, used technical chord progressions to exclude unwanted outsiders. Later, Marshall McLuhan, the media theorist, distinguished between hot media and cool media on the basis of their definition and the extent to which they elicited participation.¹⁸ Hot media like radio and newspaper engage one sense (hearing or vision) and are highly defined and so require little involvement. By contrast, cool media like television engage multiple senses and the involvement of an audience because they are not as highly defined. In this book, I use the term “cool” to capture the insurgent and improvisational dimension in jazz, as well as the low-definition and high-involvement experiences mentioned by McLuhan.

The key in cool mobilization is to engage audiences through collective experiences that generate *communities of feeling*, in which audience members don't just have their emotions aroused but encounter what literary critic Raymond Williams has called *social experiences in solution*, where participants actively *live* meanings and values associated with a social movement.¹⁹ Consider the recycling movement, which seeks to promote sustainable use of resources and rests on the daily ritual of carefully segregating glass, plastic, and paper so that they can be put to later use. Often, these experiences are sustained by social networks that connect participants, or other formal and informal social structures that amplify the initial emotion responsible for joining the movement and strengthen feelings of solidarity. Social experiences in solution arouse feelings of pride and happiness, and, above all, can create a shock of self-discovery as

members realize new capacities. In the personal computing movement, for instance, Homebrewing clubs linked hobbyists into a community and made them into both builders and users of personal computers.

Together, then, hot causes and cool solutions power collective action, and collective action creates or constrains markets. Hot causes intensify emotions and trigger new beliefs. Cool mobilization also evokes emotion, but by engaging participants in new collective experiences that transform beliefs. Hot causes are highly defined, and their definition gives them emotional resonance. Cool mobilization has lower definition and requires conscious participation—indeed, participants have to “fill out” the experience through their actions and experimentation. Both underlie the formation of new identities.

As a final introductory example, consider the Slow Food movement—a collective endeavor seeking to defend traditional culture and cuisine that arose in Italy. The hot cause was fast food and its stultifying homogeneity and unhealthiness. The cool mobilization was “slow food”—the communal enjoyment of locally available cuisines. The movement started with a “lightning rod” issue—the establishment of a McDonald’s near the Spanish Steps in Rome—that instantly crystallized the movement’s grievances. Carlo Petrini, a leader of the gastronomical branch of ARCI (a national network of social clubs tied to the Italian Communist Party), and his associates organized a cool experience that mobilized the interest and commitment of the audience—a sit-in and pasta-eating contest that rewarded the slowest eater. Their protest action proclaimed that Rome was about “slow food”

and local and seasonal cuisine, not “fast food.” The event soon blossomed into a movement, helped by the growth of local associations of volunteers who became champions of local cuisines, ingredients, and traditions (the *convivia*). In turn, the growth of *convivia* led to the revival of *osteria*, traditional Italian restaurants that used authentic ingredients and prepared traditional food. In short, the hot cause was “McDomination” concretized by a lightning-rod issue that aroused anger against chains and feelings of solidarity among activists. The cool mobilization hinged on the celebration of local cuisines and the reawakening of local identities. Since its origins, the Slow Food movement has successfully spread from Italy to other Western European countries, as well as to the United States.

■ Invitation

Social movements are a double-edged sword: they create new identities and underlie the emergence of new markets, new niches in mature markets, and new styles in markets for creative arts, but at the same time they can arise to protect besieged identities and curtail markets by pushing for new laws, thwarting technological change, and limiting executive discretion. One study shows that media coverage of protests targeting companies reduced stock prices by an average of 0.4 percent to 1 percent.²⁰

The joined hands of market rebels make or break radical innovations by exploiting hot causes and cool solutions in many of the markets that affect our daily life. We drive cars, drink beer, patronize restaurants, frequent retail stores, rely

on medicines, and purchase stocks—and, as we'll see in later chapters, all of these markets have been shaped by social movements.

Chapter 2 undermines a popular conception that Henry Ford created the automobile industry by showing how automobile clubs transformed the car from a devilish contraption into a cultural necessity. The car was a topic of hot debate, and automobile clubs whose members were early adopters of the automobile rebelled against convention and mobilized support for the car by organizing reliability races, which served as tests that told consumers that cars were viable. The case of the car provides potential clues to the failure of new product innovations such as the Segway.

Chapter 3 tackles a puzzle in economic theory: how is new entry possible in an industry with excessive concentration? The United States has more independently owned breweries than does Germany, which has much lower levels of concentration. The microbrewing rebellion was driven by a hot cause—the tasteless beer made by industrial beer manufacturers—and sustained through cool mobilization—brewpubs that made beer on a small scale with artisanal techniques and traditional materials, making it possible for a new niche to be created in a mature market.

In markets for creative arts, the conditions of production inhibit radical technological change because the work of the performer is an end in itself. If this is true, how does disruptive technological change lead to new products and new processes? Chapter 4 chronicles how the *nouvelle cuisine* movement was powered by a hot cause—the rigid orthodoxy of classical cuisine—and a cool mobilization—the chef as an

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inventor and improviser, thereby leading to a technological change in a market for creative arts.

Chapter 5 asks how governance innovations that radically redistribute power in markets become accepted and spread across countries. It looks at how the investor rights movement emerged in the United States and promoted new procedures to set compensation of CEOs and elect directors that sharply reduced the discretion of managers, then spread to Germany—a country with a very different capital market structure than that of the United States.

In dramatic contrast, the next two chapters highlight how market rebels exploit collective action to impede business innovation markets. Chapter 6 explores how social movements can curtail the entry of a technologically superior alternative into existing markets. It studies the popular upsurge against retail chain stores in America during the period starting in the 1920s when chains like A&P and Montgomery Ward proliferated across the country and transformed the retail sector. It elaborates how the anti-chain store movement sought to protect mom-and-pop stores from the advance of large chain stores in the retail sphere in the 1920s by pressuring state legislatures to enact hostile tax laws in the United States and describes the counterattack by chain stores.

Chapter 7 asks how rebels in the “streets” get their ideas into boardroom “suites” and shape the decision making of top managers of large firms. It spells out how anti-biotechnology activists prevented large German pharmaceutical firms from commercializing their knowledge by arousing fears of Nazi-style eugenics, creating regulatory uncertainty

that undermined investment calculations, and impugning the identities of scientists. Chapter 8 discusses the implications for constructing hot causes and developing cool solutions for managers.

Market rebels enable and constrain radical business innovation in markets and, therefore, represent a potential opportunity and threat for organizations. This book suggests how to stop thinking like bureaucrats and how to start thinking like insurgents.