

# “Technology as Magic”

Lecture Presented at Azusa Pacific University  
November 10, 2004

Are there more seeming opposites than technology and magic? Technology works objectively and is usually efficacious, whereas magic, based on superstition, seems to be ineffective. The former is perceived to be rational and is associated with a scientific outlook; the latter is seen to be irrational and is associated with a religious sensibility. But our expectations for technology have become magical and our use of it is increasingly irrational. Magic in turn has acquired a rational façade and is used like technology for purposes of efficiency. In short, technology and magic, while separate and distinct categories in some abstract sense, are now related to one another in such a way that each has acquired important characteristics of the other.

Magic begins historically in the attempt to influence nature, which was experienced as sacred. How can we harness the power of nature, to make it work for us? In prehistoric times humans participated with the rest of nature in the re-creation or renewal of nature. Magic represented an attempt to persuade nature to act in the best interest of humans. Today, however, technology is perceived to be a force greater than that of nature, for it is successfully used to exploit the resources of nature and to re-create nature. If the sacred is ultimately that which is experienced as absolutely powerful, then it was inevitable that technology would replace nature as the object of tacit veneration. There is a world of difference between nature and technology, however, for the latter is our own creation. To harness the sacred power of technology means to extend its reach over all of life; nothing can be excluded.

Magic, as Marcel Mauss noted, is about wish fulfillment. Magic arises in the hiatus between the wish and its fulfillment. Magic represents the childish dimension of human existence that adulthood does not fully suppress. We wish for things, but reality intrudes upon our fantasies and frustrates their realization. Magic offers a way of influencing the desired outcome. Magic establishes a *symbolic* link between the magical practice and the desired

outcome so that the magical practice is both responsible for the outcome and is its *operational indicator*. The power of the sacred is the middle term between the magical practice and the desired outcome. Magic is effective only in relation to humans and only when they believe in it. Magic succeeds as a self-fulfilling prophecy: belief in magic makes it seem efficacious. In relation to nature, magic is only apparently effective. If my bear-hunting ritual is invariably performed before I hunt bears, then it is associated with successful hunts. Hunting failures can always be explained away, e.g., we did not perform the ritual correctly. Magical healing can be effective, however, as a placebo, a kind of emotional self-fulfilling prophecy. Placebos often do work, if only temporarily.

Our magical relationship to technology is demonstrated by two phenomena: our magical expectations for technology and the plethora of imitation technologies that function as forms of magic.

Our magical expectations for technology involve spiritualizing technology. Our expectations for the computer, brotechnology and medical technology are utopian—the creation of a new nature and a perfect human being. From the “old man” of nature to the “new man” of technology.

My principal argument is that today our expectations for technology are magical to the point that we have generated a multitude of imitation technologies that function as magical practices. This is an elaboration of Jacques Ellul’s seminal idea that in a technological civilization everything becomes an imitation of technology or a compensation for its impact. These imitation technologies fall into two main categories: psychological techniques and managerial or administrative techniques. Their paramount purpose is to adjust humans to a technological civilization, to bring them in line with technical progress. The myth that organizes

technology and its imitations into a coherent system of belief is technological utopianism.

Advertising and television programs contain the basic themes and elaborated stories of technological utopianism.

Before continuing this discussion of modern magic, we need to clarify several concepts. The definition of technology is invariably problematic. I will use that of Jacques Ellul, who defines it as “the totality of methods rationally arrived at and having maximum efficiency (for a given stage of development) in every field of human activity.” In his view the technology of the past 150 years is simply not comparable to that prior to the nineteenth century. In the West we made a conscious decision in the nineteenth century to push technology as fast and as far as we could. The rapid proliferation of technology, discovering multiple uses for the same technology, and the coordination of disparate technologies resulted in a civilization in which technology became dominant. The upshot of this is that, unlike the past where new technologies were relatively few in any period and relatively slow to change and thus more readily integrated into the culture, now technology dominates culture and deconstructs it. For instance, increasingly “how to” books on everything from child-rearing, to friendship, to marriage, and to success supplant manners and morality.

In Ellul’s view, then, technology refers to both material and non-material technology. The latter include what I previously referred to as imitation technologies. If they are to be included in the definition and theory of modern technology, it is necessary to show first that they are an expression of the same “will to power” and the same interest in efficiency that underlies material technology and second to explain how they work. Psychological and administrative techniques operate according to information that affects humans. Machines, by contrast, operate

independent of their impact on humans. My book *Technology as Magic* is an attempt to explain how non-material technology works.

If technology includes both non-material techniques and material technology and given that technologies are becoming increasingly coordinated, then it's not an exaggeration to refer to technology as a system. Technology is an open system in that it interacts with its two environments—nature and human society—but it is not open in that it does not possess genuine feedback. What finally allows technology to become a system is the widespread use of the computer. The computer allows each technology to become a source of information for the coordination of the various technologies. Technology is a system, then, at the level of information. This means, however, that each subsystem loses some of its flexibility, for its courses of action must be adjusted to the needs of the other subsystems. The mutual interaction and mutual dependency of subsystems made possible by the computer is the technological system. In large urban areas, for example, the various technological subsystems such as communication, transportation, law enforcement, and commerce become more dependent upon one another for the smooth operation of the overall urban system.

Although the technological system is an open system, it is more or less autonomous in relation to its human environment. The problem is that the technological system allows for no effective feedback, that is, self-regulation. Feedback means that a system (such as an ecological system) has the ability to correct the problem at its source. For instance, if the technological system possessed feedback, then the use of the automobile, a major cause of air pollution, would be eliminated or severely curtailed. Instead, we attempt to discover ways of countering the negative effects of the automobile on the environment. Only humans, however, can provide feedback for the technological system. But because of our supreme faith in technology and

because of our delusion that as technology's creators we are its masters, we do not perceive the need to provide such feedback. As a consequence, the technological system is more or less autonomous, that is, independent of moral control.

It is only when technology became a system (post 1950) that it fully became our life-milieu. A milieu is an environment, at once both material and symbolic, in relation to which humans face their most formidable problems and from which they derive the means of survival and some hope for the future. A milieu has three basic characteristics: immediacy, sustenance and peril, and mediation. We are in immediate and direct relationship with our milieu; it forces us to adapt, to conform just as surely as we manipulate it. From the milieu we derive all that we need to live—sustenance for the body and spirit: food, clothing, shelter, order, and meaning. Concurrently, however, the milieu presents the greatest threat to human existence, as in pestilence, famine, poisons, wild animals, political strife, war, and pollution. The milieu, then, is ambiguous in value and produces an ambivalent reaction on our part—attraction and revulsion, desire and fear.

In Ellul's theory, humans have inhabited three milieus—nature, society, and technology. Humans began the slow transition from the milieu of nature to the milieu of society nine to eleven thousand years ago, depending upon the specific geographical location. The milieu of society was made possible by agriculture, and the rise of civilizations and cities became complete five to six thousand years ago. The movement to the milieu of technology occurred in the nineteenth century and became more fully established with the widespread use of the computer in the twentieth century. Ellul's theory is no finalist theory in which the last stage represents the culmination of history; moreover, there is no deterministic principle underlying the process.

Each subsequent milieu (for instance, society in relation to nature) mediates the preceding one, rendering it an indirect force. The preceding milieu becomes an ideological model for the subsequent milieu, thereby providing an illusion of where power resides. In dialectical fashion, however, it is actually the subsequent milieu that is used to interpret its predecessor. In the milieu of society, for example, nature is actually read through society, that is, it is anthropomorphized. Therefore, nature as a model for society is, to a great extent, a nature that is already a reflection of society. Similarly, society serves as a model in the milieu of technology, but it is a society interpreted through a technological logic and thereby rendered increasingly technological. Each preceding milieu continues to exert an influence on the subsequent one, but the threat that it represents tends to become less important overall. In the milieu of nature, the major problems were wild animals, poisons, and so forth; in the milieu of society the greatest threats are political and military conflicts; in the milieu of technology, the principal obstacles to survival are posed by technology itself, as with pollution, nuclear energy, and the stress of the impersonality and rapid tempo of life.

Magic does not operate according to a single principle; rather it follows the lead of the human life-milieu. Magic changes according to what is perceived to be sacred. The sacred is, in the most general sense, the life-milieu. If the sacred is defined as ultimate power and reality, what better fits this than the milieu? One's milieu is, as we have seen previously, both that which threatens life (material and spiritual) and that which sustains life. The sacred, then, refers both to positive and negative forces. This is the basic ambiguity of sacred value that social scientists from Émile Durkheim to the present have observed. Each milieu is organized around a different set of polarities: life and death in the milieu of nature, good and evil in the milieu of society, and efficiency and inefficiency in the milieu of technology.

The key issue here is that a milieu is a dynamic totality so that both poles participate in the regeneration of the milieu and are thus internally related. Regeneration is the movement from the negative to the positive pole. For example, all living things depend for their continued existence upon the death of other living things. Life comes from death.

What is tacitly experienced as sacred is expressed in symbol, song, and story and lived out through ritual. Therefore, we can refer to the symbol-story complex as the theory of the sacred and ritual as its practice. The most important stories describe the origin of the universe and (in the milieu of society) of one's ancestors, a "golden age" when things were perfect, or they described a utopian future. The stories or myths organize the various symbols about the life-milieu so that they come to possess a larger meaning. Water, for instance, is almost a universal symbol of death and rebirth. This symbol gains meaning by being placed in the content of a story of a past creation or a future utopia. Rituals that have not been secularized allow humans to participate in or effect the movement of their life-milieu from negative to positive pole and back again to negative in a constant cycle of regeneration. Sacred rituals are invariably magical (at least as I define magic).

The sacred, symbol, myth, and ritual comprise a cultural configuration that represents the deepest and most profound structure of any culture; it exists at a tacit or metaconscious level.

In the milieu of nature, magic operates according to the principle of creative persuasion. In prehistory humans understood themselves to be part of a sacred totality in which they were participants. Beyond humans and their representations, that is, categories and concepts, was a reality that was similar to them in kind. Humans participated in this reality by naming and classifying the parts of nature; in so doing they helped to create and maintain it. Humans did not control the power of nature but acted as its agents; hence, the necessity of persuasion as a way of



attempting to realize the collective wishes of the group. Humans helped to create the world they lived in, but not in any automatic or causal way; for the power they attempted to make work on their behalf was mysterious and beyond their control. Magic in the milieu of nature was based on the principle of persuasion in which humans participated in creating that for which they wished. The feast is the magical ritual that allowed for the regeneration of the milieu.

In the milieu of society, magic operates according to the principle of retribution—every evil act is punished and every good deed is rewarded. The universe becomes a moral universe. This anthropomorphizing of nature appears to give humans greater control over their future. Magic becomes effective when the ritual is correctly performed. Rites for the expulsion of evil, scapegoating and sacrifice, allow the milieu of society to be renewed—from evil to good, disorder to order.

In the milieu of technology, magic acts according to the principle of efficient causality. Science establishes the causal or probabilistic laws according to which it is believed nature and society are organized, and technology exploits them in the interest of efficiency. Technology, but only in the milieu of technology, is interested exclusively in an efficient outcome. *Magic now imitates technology*. These magical or imitation technologies are the social forms that our magical expectations of technology assume.

A technological society is one whose chief value, purpose, or goal is efficiency, maximum production and maximum consumption. Over against rational technique stands inefficiency as instinct, the will to power. These opposite poles of a technological milieu are, however, at a deeper level related. For as Ellul notes, technology and instinctual desire form a dialectic: desire today can only be satisfied by technology, and technology can only advance by the constant stimulation of appetite. Jean Brun first called attention to the paradox that the cold,

impersonal, abstract force of technology does not finally appeal to reason and moderation but to our desire for power and possessions. Technology as a system is the “head of Apollo” superimposed upon instinct, the will to power, the “body of Dionysius.”

The instincts most associated with the will to power are sexuality and aggression. As forms of inefficiency, sex and violence are the negative to the positive pole of efficiency (technology). If a milieu is comprised of two poles in tension, and the principle of regeneration involves the movement from the negative to the positive pole, then here the continuum between the poles is *excessive experimental consumption*.

The sacred power of technology becomes manifest in technological objects (consumer goods). These forms of consumption become differentially sacred depending upon individual circumstances. We have already seen, however, that technology, while manifestly opposed to instinct, is perfectly suited to it at a deeper level because both represent the will to power. Moreover, advertising uses sex and violence to sell these consumer goods, for instance, the eroticizing of the automobile. Even more important than advertising’s direct use of sex and violence is its indirect use: the consumer goods of advertising are placed in spatial relationship to the sex- and violence-saturated programs of the mass media. In this sense programs are ads for advertisements. In consuming the technological object we are indirectly consuming the instinctual power of sex and violence. Enlarge the sphere of the instinctual, and the desire to possess and use technological objects increases. The motto is: the more we consume (if only vicariously) sex and violence, the more technological objects we will consume; the more objects we consume, the more instinctual power we possess.

Roger Caillois observes that excess is at the “heart of the festival.” The more one pushes the negative pole, the greater the abundance at the positive pole. In the milieu of technology the

festival is primarily centered in the excess of sex and violence in the mass media. As the ritualization of the principle of regeneration, the festival always begins with the negative pole—death, evil, the instinctual (sex and violence)—in the movement to the positive pole—life, good, efficiency (abundance of technological objects).

Before beginning a more detailed analysis of magic in a technological civilization, I wish to discuss partial exceptions to the theory of the three milieus, the sacred, and magic.

Judaism and Christianity are partial exceptions to the theory of the three milieus in respect to religion and magic. Some have argued that Judaism and Christianity were never intended to become religions and certainly were expected to eschew magic. The key concept here is faith. Faith assumes both freedom and individuality. In these respects it is the opposite of magical ritual, which is deterministic and collectivistic. French philosopher Paul Ricoeur, for instance, has demonstrated that the parables of Jesus are about faith. Few if any parables speak to all three stages of faith—encountering God, freely turning one's back on sin, and putting one's faith into practice—but taken as a whole they address the issue completely, despite being stated metaphorically. It follows that a community of believers should first be a collection of individuals who freely have accepted the gift of faith.

This view of Judaism and Christianity rejects the idea of religion as an institution of the overall society and a form of societal control. Insofar as Judaism and Christianity subscribe to the concept of a transcendent God, both faiths reject in theory the concept of the sacred, tied as it is to the life-milieu of humans. A collective sense of the sacred is the foundation of culture by establishing an absolute value. Religion is the ultimate expression of the sacred in the milieu of society; it leads to the worship of one's society, whose ancestors are sacred, or of one's church, whose representatives have objectified God's will in ritual practices. Dostoyevsky called

attention to the sacralization of the church in the “The Grand Inquisitor” section of *The Brothers Karamazov*. Now insofar as Judaism and Christianity have often functioned in practice as religions like other religions and became the paramount form of social control (Christendom, for example) or become absorbed by the larger society, they can rightfully be considered within the theory of the three milieus.

The three principal forms of magical technique today are found in the mass media, therapy, and management. The most important magic occurs in the media, in advertising and television programs. For here is found the justification for all technology—both material and non-material imitation technology that functions as magic. This justification is technological utopianism.

Technological utopianism is the myth of a technological civilization, and it resides in advertising and the programs of the mass media. We will first look at advertising by itself and later in relationship to television programs. The mythological values of advertising culture have been identified by a host of researchers. Advertising poses to and answers for the consumer the fundamental question: “How can I be happy through consumption?” Advertising sells “well-being and happiness.” Happiness is the paramount value of advertising culture and as such is the most general; it implies and is related to all the others. Happiness is portrayed in advertising as pleasure, increased consumption. Leisure time is the opportunity for consumption and pleasure; hence leisure activity predominates over work in advertising. Happiness is located in the ecstatic expressions on the faces of the actors or models. Even the family when portrayed in advertising is the locus of or background for a consumer paradise. By 1940, the American Dream, as expressed in advertising, suggested that “you can have it all.”

Second only to happiness and directly related to it in the general idea of well-being is health. Allied to the value of health are those of beauty and youth. All three refer to dimensions of the human body: health refers to the perfection of the body or at least its general maintenance; beauty refers to its pleasing external appearance; youth, to a combination of health and beauty, to a perfected state of existence. In advertising, youth is reality. “Women are the chosen victims of the ‘youth cult,’” in part because they were identified earlier in the twentieth century as the major consumers.

Success and high status as advertising values appear less frequently than the above values. Even here, because of the preponderance of leisure over work in the ads, high status and success are realized in consumption. After 1965 there was a marked emphasis on lifestyle in advertising. The lifestyles portrayed are, of course, those of successful and higher status people.

Advertising depicts freedom in two related ways: the free world with its plethora of goods, and the enormous number of choices consumers have. A Wendy’s commercial of the 1980s plays this to perfection. In the ad, a small group of Russians sit watching a fashion show in which a stout woman stylelessly attired wears the same garment to show the audience the latest in daywear, beachwear, and nightwear. Quickly the scene changes to the United States where freedom is shown to be choosing what to put on your burger while at Wendy’s.

All the above values are an expression of consumerism and can be reduced to consumer pleasure and choice—happiness and health. Yet the mythological symbols of technological utopianism are better understood in the context of the structure or logic of advertising than in terms of its content. Neil Postman has exposed this logic in his interpretation of a classic ad, “The Parable of the Ring around the Collar.” The ad finds a married couple who normally get along well in a commonplace setting, a restaurant; the waitress notices the husband’s dirty shirt

collar and calls attention to it. The husband is upset and the wife embarrassed. The next scene shows the wife using the correct detergent that eliminates the unseemly ring around the collar. Finally the couple returns to the restaurant enveloped in ecstatic rapture. In Postman's analysis there is a narrative in the ad that takes this form: problem, solution, ecstasy. The problem is the dirty collar along with the husband's anger over the social embarrassment; the solution is the advertised brand of detergent; ecstasy is the satisfied expression on the faces of the couple in the aftermath of the solution.

I think, however, that there are two distinct but closely related logics at work in this single ad. Moreover, I maintain that all ads contain either one or the other and often both of these logics. Finally, I suggest that these two logics illustrate perfectly the two dimensions of the myth of technological utopianism: The objective power of technique and its subjective impact upon the consumer. The two logics are: problem to solution and discontent to content. The problem-solution logic was dominant in advertising until the early twentieth century in a product information format. After 1925 advertisers began to use approaches that appealed to the consumer's desire to be happy. Therefore, the personalized and lifestyle formats emphasize what the product can do for the consumer in terms of pleasure. The second logic, then is discontent to content. Sometimes the discontent is explicitly shown, as in "The Ring Around the Collar" ad. The husband is angry, the wife is embarrassed; both are humiliated. The use of the correct detergent produces emotional satisfaction if not ecstasy. The two logics, problem-solution and discontent-content, correspond to the two major story lines of the myth of technological utopianism. Each logic implies the other, whether made explicit or not in the advertisement. The overall myth unifies the two logics.

This utopian “narrative” is straightforward. Science and especially technology are leading us to a utopia of maximum production and consumption. Technology insures our collective survival and success in allowing us more efficient control of life and providing solutions to all our problems. This promised land is moreover a world of total consumption. In it people have perfect health, are beautiful, eternally youthful, free to do whatever is pleasurable, and thus completely happy. The myth of technological utopianism is promulgated through the liturgy of advertising. This myth is as much a myth as that of any religious people.

If the world of advertising is truly a mythological world, then it exists outside of the dialectic of truth and falsehood. For the world advertising creates is not actual but only possible. As with all mythologized rituals, advertising can withstand the negative test of reality for there is always a next time: the possibility of perfection and total fulfillment in the newest commodity. Myth likewise works to overcome contradictions that we experience in the everyday world. The technological system creates cultural meaninglessness and intense psychological stress. This system does not rest easy upon human society. As well, technological growth threatens the physical environment. Consequently, some of technology has to be directed toward helping individuals adjust to the system and toward preparing the damage to the environment. But this can only be done if adjustment is brought within the symbols of happiness and health, and repair (as survival) is contained within the symbol of success. As part of the myth of technological utopianism, all four symbols are interrelated; moreover, each one implies the rest. The value of success was gradually transformed from an individual to a collective phenomenon. Success became by the late nineteenth century the success of the organization.

The value of success is related to that of survival: both are expressions of collective power turned into a value. Survival is minimalist success. If success today is most epitomized

in technological growth, then survival is related to the destruction aspects of that same growth. The value of survival grows increasingly important as we become acutely aware of problems such as pollution, overpopulation, and potential nuclear catastrophe that require repair. Success (as technological growth) stands in a contradictory relationship to survival (as technological repair).

As success is collectivized in technology, it is redefined for the individual in terms of well-being (happiness and health). During the twentieth century happiness and health have each come to possess two distinct meanings. Happiness refers to the consumption of goods and services and to adjustment to one's circumstances in life; health refers to the perfection of the body through consumer goods and services, e.g., vitamins and organized exercise, and to adjustment, defined as emotional or mental health. (The most prevalent criterion of mental health for much of this century has been adjustment.) Therefore, happiness and health have a common meaning in adjustment; concurrently happiness as consumption and health as the perfection of the body share the common meaning of physical well-being. Happiness and health (taken together) have two overall meanings: physical well-being and emotion well-being (adjustment). The overall meanings, moreover, are related. First, a consumption-oriented lifestyle is a major part of adjustment to the technological system. It is our compensation for the diminution of moral responsibility and individual freedom. Second, physical well-being and emotional well-being are increasingly perceived to be interdependent. In the real world, however, success as technological growth can threaten survival, just as happiness as consumption can impair one's physical or emotional health.

If television programs are an advertisement for advertising, then one should expect to find the symbols of technological utopianism embedded in the different genres of television



program. Indeed, this is the case. One will not discover all four symbols in any single genre of program, but taken as a whole, the genres exhibit the full range of mythological symbols. Each of the four symbols is perfectly exemplified in a genre.

Largely because of television, sports has become spectacle. Sports enthusiasts and critics appear to agree that winning is the “nucleus of the sport.” No better indicator of the supreme emphasis on winning exists than the decline of sportsmanship. One sees this especially in the sports that draw the largest audiences—soccer worldwide, and football and basketball in the United States. Players are taught how to get away with certain rule violations and when to use them strategically. Even more obvious is the increase of “trash talking,” the attempt to intimidate one’s opponent. Gary Gumpert argues that television replay plays a part in the effacement of sportsmanship by emphasizing and normalizing rule infractions.

Modern sports is technique-driven. The incessant experimentation with superior training techniques, better equipment, more efficient organization of practice, and more complete control of athletes’ minds and motivation are indicative of a preoccupation with winning and with records. Under these circumstances the distinction between amateur and professional is blurred. At an ever younger age children are subjected to professionalized sports instruction. Sports is no longer a game; it has been transformed into a technique of success.

Children’s shows are about happiness in the form of toys. Until age seven or eight, children cannot distinguish between commercials and television programs. When they finally can distinguish between the two, it makes little difference; for many of the programs center about figures that exist as toys, sometimes before the program was created. Tom Engelhart referred to the process of creating a cartoon show around a set of toy characters that market research had indicated would be well-received as the “Strawberry Shortcake Strategy.” Sometimes the

characters in cartoon shows are not toys, but characters already extant in video games: Donkey Kong, Jr., Pitfall, Dragon's Lair. In one instance the cartoon was based on candy—Gummi Bears. Under these circumstances, children's cartoons are simply infomercials.

News programs, serious news not just public relations announcements, are about survival. Despite self-conscious attempts to have an uplifting story in each program, the news is invariably bad news: tornadoes, oil-spills, nuclear waste management, ethnic conflict, political corruption, and wars. The news is about who and what survives. Survival is a kind of minimal success, and it receives emphasis when the perception of crisis abounds. The significance of the news is that it indirectly and sometimes directly points to the need for technology to repair the damage to nature or society. The very episodic nature of the news favors a technological rather than a moral or political approach to a crisis.

Soap operas appear to be about everything imaginable, but mainly they are about personal relationships and "life-adjustment problems." The characters on soap operas express their feelings about what goes on around and to them and expect others to do likewise. The illnesses, deaths, crimes, and intrigue are the background to the foreground of personal feelings and needed adjustments. Moreover, many personal problems are "cured" by psychological insight. At the same time, soap operas feature an inordinate number of wealthy and glamorous people. Perhaps this is a way of showing that the distance from health (as adjustment) to happiness (as consumption) is not too great.

Technological utopianism infuses all of technology—material and non-material—with an aura of magic. The magical practices of the mass media create religious ends for technology.

Therapy, self-help, and positive thinking make up a large part of what I have termed psychological technique. Professional therapy and its popular counterparts, self-help groups and positive thinking seminars, appear to have coalesced around the issue of self-esteem.

To get at the magical character of modern therapy, perhaps it is best to start with its effectiveness. Therapy works: a majority of people who undergo psychotherapy report that their lives have been improved. There are numerous qualifications and reasons why therapy works, however. Some of those who have studied why therapy works have already ascertained its magical character. The research indicates that in general the effectiveness of therapy is unrelated to the experience and education of the therapist, the type of therapy employed, and the length of therapy. Moreover, psychological experts are no better than ordinary people in predicting psychological problems. Therapy works but evidently not as applied science.

Those with little or no professional education and with little or no experience do as well in helping clients as those with more education and experience. In one study, college professors did as well as experienced professional psychotherapists in the treatment of clients; in another, high school students performed as well as psychiatrists and psychologists in predicting future violent behavior of patients based on a checklist of patient characteristics.

In a review of forty-one studies comparing professionals and paraprofessionals, it was discovered that in twenty-eight studies there was no difference in effectiveness between the two groups, that in twelve studies the paraprofessionals were more effective, but that in only one study were the professionals more effective. One qualification in the studies of the proficiency of therapists was that therapy with a professional therapist worked somewhat better for those “highly motivated for therapy” and eager to make changes in their lives. Often such patients are themselves college educated and expect their therapist to have advanced degrees.

No single type of therapy has proved to be more effective than the others. Here and there a particular therapy may work better for a specific problem, e.g. behavioral therapy sometimes works better with phobias. Multiple treatments, e.g., psychotherapy and medicine, are sometimes more effective than any single treatment. One study compared behavioral therapy, psychoanalysis, and being placed on a waiting list (after an initial psychological screening), and found no difference in the outcomes. One psychiatrist even suggests that most “emotional nonpsychotic complaints...improve without treatment,” what in medicine is sometimes called spontaneous remission.

Length of treatment is unrelated to the relief of discomfort, but in one study it was related positively to the patient’s ability to relate to others. The longer the treatment the less isolated, dependent, cautious, and inhibited the client became. This was most pronounced in group therapy. One research psychologist summarizes the over 300 studies of the effectiveness of therapy, “studies supporting the unique efficacy of high-status mental health professionals in psychotherapy, or their unique ability to predict human outcome, or their unique ability to learn from experience in some ineffable and intuitive manner, simply don’t exist.” This is even more reason to treat professional and popular psychology and therapy as one.

Given the preoccupation with self-esteem in psychotherapy and the larger culture, we should briefly summarize the research on the topic. Studies indicate low self-esteem does not lead to poor academic achievement, alcoholism, violence, teen pregnancy, or child abuse. Instead, self-destructive and seriously immoral actions may lead to a lower self-esteem or personal unhappiness. There is scant evidence that self-esteem as an inner state is related to anything external to itself. Suffering and unhappiness are an important part of life; indeed they can help us change our actions and attempt to alter our social environment. Hopelessness and a

sense of meaninglessness, on the other hand, leave us unable to make the effort to address suffering, give it meaning, and begin to transcend it. Improved self-esteem, which is merely compensation for suffering and stress, may actually coexist with a deeper sense of hopelessness.

Therapy, self-help, and positive thinking are for the most part magical practices not scientific techniques. They act as placebos, an emotional self-fulfilling prophecy, for clients who believe in the therapy and/or the therapist. How else does one explain the overwhelming but temporary success of therapy?

Therapy embodies the mythological symbol of health as adjustment. The primary function of most therapy is to adjust humans to a technological civilization.

Management techniques, by contrast, do not work insofar as they claim to affect the external economic marketplace. Remember my assertion that magic only works on humans. Analysts typically distinguish between the human relations approach and the scientific management approach. The former is a psychological technique, whereas the latter employs statistical information. Because the human relations approach shares much in common with therapy, self-help, and positive thinking, I will concentrate on the scientific management approach. Henry Mintzberg's exhaustive study of strategic planning found it to be a failure; moreover, his analysis of how effective managers perform their work discovered that formal information was of little consequence for the most important decisions. Martha Feldman and James March have studied the relationship between information and decision making in organizations. They conclude that much of the information has little relevance for making decisions, that much of it is used to justify a decision made before the data were collected, and that requested information is often not used to help make the decision for which it was requested.

As the basis for decision making, formal information suffers from the following deficiencies: (1) it is too abstract, that is, it leaves out that which is qualitative and depends on context for its meaning; (2) it is too general if it is in the form of aggregate data; (3) it is sometimes unreliable, especially if it is only based on a guess; (4) it is sometimes politicized if the department, division, or agency of origin senses the need to protect itself by inflating or deflating the data; (5) it is only convenient, that is, information and managerial techniques are often chosen because they are accessible to a time-strapped manager. Bureaucratic rules, which most often are procedural rules, eliminate the judgment and common sense of the manager. Expert systems, which combine formal information and decision rules, take formalization to an even higher level. If formal information and rational management techniques are not effective, what is?

Successful managers make extensive use of their own information knowledge, that is, practical knowledge based on experience and that of others both inside and outside the company. Consequently, their decisions are judgments, not calculations or logical conclusions. They make use of formal knowledge where appropriate, for some things can be measured and some decisions are simple and logical. But to know when to calculate and when to make a qualitative judgment is based on experience and requires a judgment. Formal decision-making models imply an “anticipatory, consequential logic.” They employ hypothetical data and trace out alternative future outcomes depending on which choices one makes. Decisions based on experiential learning are grounded in past and present experiences with the understanding that experience has to be applied to different and ever-changing contexts, and that the future will contain many surprises. Formal decision-making models, information systems, and formal planning assume that all reality is logical, if not mathematical.

As with psychological magic, administrative magic creates an indirect or symbolic link between information and outcome. Because it is believed that statistical information is the operational indicator of organizational success, such information will be collected and used to justify organizational discussions. Magic here acts as a self-fulfilling prophecy (a false definition that by our actions we make come true). If statistical information is invariably collected and used, it will be associated with any success the organization enjoys.

My contribution to the study of technology has been to expose magic in its technological forms: the mass media, therapy, and management. Each form of magic is principally related to a specific mythological symbol: advertising to happiness (as consumption), therapy to health (as adjustment), and management to success/survival. The mass media organize the various magical forms under the unifying myth of technological utopianism. Without magic, technology would have no fatal sway over us. It is here that the struggle for freedom must begin.