The Psychology of Human Misjudgment

by Charles T. Munger

PREFACE

When I read transcripts of my psychology talks given about fifteen years ago, I realized that I could now create a more logical but much longer "talk," including most of what I had earlier said. But I immediately saw four big disadvantages.

First, the longer "talk," because it was written out with more logical completeness, would be more boring and confusing to many people than any earlier talk. This would happen because I would use idiosyncratic definitions of psychological tendencies in a manner reminiscent of both psychology textbooks and Euclid. And who reads textbooks for fun or revisits Euclid?

Second, because my formal psychological knowledge came only from skimming three psychology textbooks about fifteen years ago, I know virtually nothing about any academic psychology later developed. Yet, in a longer talk containing guesses, I would be criticizing much academic psychology. This sort of intrusion into a professional territory by an amateur would be sure to be resented by professors who would rejoice in finding my errors and might be prompted to respond to my published criticism by providing theirs. Why should I care about new criticism? Well, who likes new hostility from articulate critics with an information advantage?

Third, a longer version of my ideas would surely draw some disapproval from people formerly disposed to like me. Not only would there be stylistic and substantive objections, but also there would be perceptions of arrogance in an old man who displayed much disregard for conventional wisdom while "popping-off" on a subject in which he had never taken a course. My old Harvard Law classmate, Ed Rothschild, always called such a popping-off "the shoe button complex," named for the condition of a family friend who spoke in oracular style on all subjects after becoming dominant in the shoe button business.

Fourth, I might make a fool of myself. Despite these four very considerable objections, I decided to publish the much-expanded version. Thus, after many decades in which I have succeeded mostly by restricting action to jobs and methods in which I was unlikely to fail, I have now chosen a course of action in which (1) I have no significant personal benefit to gain, (2) I will surely give some pain to family members and friends, and (3) I may make myself ridiculous. Why am I doing this?

One reason may be that my nature makes me incline toward diagnosing and talking about errors in conventional wisdom. And despite years of being smoothed out by the hard knocks that were inevitable for one with my attitude, I don't believe life ever knocked all the boy's brashness out of the man.

A second reason for my decision is my approval of the attitude of Diogenes when he asked: "Of what use is a philosopher who never offends anybody?"

My third and final reason is the strongest. I have fallen in love with my way of living out psychology because it has been so useful for me. And so, before I die, I want to imitate to some extent the bequest practices of three characters: the protagonist in John Bunyan's Pilgrims Progress, Benjamin Franklin, and my first employer, Ernest Buffett. Bunyan's character, the knight wonderfully named "Old Valiant for Truth," makes the only practical bequest available to him when he says at the end of his life: "My sword I leave to him who can wear it." And like this man, I don't mind if I have misappraised my sword, provided I have tried to see it correctly, or that many will not wish to try it, or that some who try to wield it may find it serves them not. Ben Franklin, to my great benefit, left behind his autobiography, his *Almanacks,* and much else. And Ernest Buffett did the best he could in the same mode when he left behind "How to Run a Grocery Store and a Few Things I Have Learned about Fishing." Whether or not this last contribution to the genre was the best, I will not say. But I will report that I have now known four generations of Ernest Buffett's descendants and that the results have encouraged my imitation of the founder.

I have long been very interested in standard thinking errors. However, I was educated in an era wherein the contributions of non-patient-treating psychology to an understanding of misjudgment met little approval from members of the mainstream elite. Instead, interest in psychology was pretty well confined to a group of professors who talked and published mostly for themselves, with much natural detriment from isolation and groupthink. And so, right after my time at Caltech and Harvard Law School, I possessed a vast ignorance of psychology. Those institutions failed to require knowledge of the subject. And, of course, they couldn't integrate psychology with their other subject matter when they didn't know psychology. Also, like the Nietzsche character who was proud of his lame leg, the institutions were proud of their willful avoidance of "fuzzy" psychology and "fuzzy" psychology professors.

I shared this ignorant mindset for a considerable time. And so did a lot of other people. What are we to think, for instance, of the Caltech course catalogue that for years listed just one psychology professor, self-described as a "Professor of Psychoanalytical Studies," who taught both "Abnormal Psychology" and "Psychoanalysis in Literature"?

Soon after leaving Harvard, I began a long struggle to get rid of the most dysfunctional part of my psychological ignorance. Today, I will describe my long struggle for elementary wisdom and a brief summary of my ending notions. After that, I will give examples, many quite vivid and interesting to me, of both psychology at work and antidotes to psychology-based dysfunction. Then, I will end by asking and answering some general questions

raised by what I have said. This will be a long talk.

When I started law practice, I had respect for the power of genetic evolution and appreciation of man's many evolution-based resemblances to less cognitively-gifted animals and insects. I was aware that man was a "social animal," greatly and automatically influenced by behavior he observed in men around him. I also knew that man lived, like barnyard animals and monkeys, in limited size dominance hierarchies, wherein he tended to respect authority and to like and cooperate with his own hierarchy members while displaying considerable distrust and dislike for competing men not in his own hierarchy.

But this generalized, evolution-based theory structure was inadequate to enable me to cope properly with the cognition I encountered. I was soon surrounded by much extreme irrationality, displayed in patterns and subpatterns. So surrounded, I could see that I was not going to cope as well as I wished with life unless I could acquire a better theory-structure on which to hang my observations and experiences. By then, my craving for more theory had a long history. Partly, I had always loved theory as an aid in puzzle solving and as a means of satisfying my monkey-like curiosity. And, partly. I had found that theory-structure was a superpower in helping one get what one wanted. As I had early discovered in school wherein I had excelled without labor, guided by theory, while many others, without mastery of theory, failed despite monstrous effort. Better theory, I thought. had always worked for me and, if now available, could make me acquire capital and independence faster and better assist everything I loved. And so I slowly developed my own system of psychology. more or less in the self-help style of Ben Franklin and with the determination displayed in the refrain of the nursery story: "'Then I'll do it myself,' said the little red hen."

I was greatly helped in my quest by two turns of mind. First, I had long looked for insight by inversion in the intense manner counseled by the great algebraist, Jacobi: "Invert, always invert." I sought good judgment mostly by collecting instances of bad judgment, then pondering ways to avoid such outcomes. Second, I became so avid a collector of instances of bad judgment that I paid no attention to boundaries between professional territories. After all, why should I search for some tiny, unimportant, hard-to-find new stupidity in my own field when some large, important, easy-to find stupidity was just over the fence in the other fellow's professional territory? Besides, I could already see that real-world problems didn't neatly lie within territorial boundaries. They jumped right across. And I was as dubious of any approach that, when two things were inextricably intertwined and interconnected, would try and think about one thing but not the other. I was afraid, if I tried any such restricted approach, that I would end up, in the immortal words of John L. Lewis, "with no brain at all, just a neck that had haired over."

Pure curiosity, somewhat later, made me wonder how and why destructive cults were often able, over a single long weekend, to turn many tolerably normal people into brainwashed zombies and thereafter keep them in that state indefinitely. I resolved that I would eventually find a good answer to this cult question if I could do so by general reading and much musing.

I also got curious about social insects. It fascinated me that both the fertile female honeybee and the fertile female harvester ant could multiply their quite different normal life expectancies by exactly twenty by engaging in one gangbang in the sky. The extreme success of the ants also fascinated me-how a few behavioral algorithms caused such extreme evolutionary success grounded in extremes of cooperation within the breeding colony and, almost always, extremes of lethal hostility toward ants outside the breeding colony; even ants of the same species.

Motivated as I was, by midlife I should probably have turned to psychology textbooks, but I didn't, displaying my share of the outcome predicted by the German folk saving: "We are too soon old and too late smart." However, as I later found out, I may have been lucky to avoid for so long the academic psychology that was then laid out in most textbooks. These would not then have guided me well with respect to cults and were often written as if the authors were collecting psychology experiments as a boy collects butterflies-with a passion for more butterflies and more contact with fellow collectors and little craving for synthesis in what is already possessed. When I finally got to the psychology texts, I was reminded of the observation of Jacob Viner, the great economist, that many an academic is like the truffle hound, an animal so trained and bred for one narrow purpose that it is no good at anything else. I was also appalled by hundreds of pages of extremely nonscientific musing about comparative weights of nature and nurture in human outcomes. And I found that introductory psychology texts, by and large, didn't deal appropriately with a fundamental issue: Psychological tendencies tend to be both numerous and inseparably intertwined, now and forever, as they interplay in life. Yet the complex parsing out of effects from intertwined tendencies was usually avoided by the writers of the elementary texts. Possibly the authors did not wish, through complexity, to repel entry of new devotees to their discipline. And, possibly, the cause of their inadequacy was the one given by Samuel Johnson in response to a woman who inquired as to what accounted for his dictionary's misdefinition of the word "pastern." "Pure ignorance," Johnson replied. And, finally, the text writers showed little interest in describing standard antidotes to standard psychology-driven folly, and they thus avoided most discussion of exactly what most interested me.

But academic psychology has some very important merits alongside its defects. I learned this eventually, in

the course of general reading, from a book, *Influence,* aimed at a popular audience, by a distinguished psychology professor, Robert Cialdini, at Arizona State, a very big university. Cialdini had made himself into a supertenured "Regents' Professor" at a very young age by devising, describing, and explaining a vast group of clever experiments in which man manipulated man to his detriment, With all of this made possible by man's intrinsic thinking flaws.

I immediately sent copies of Cialdini's book to all my children. I also gave Cialdini a share of Berkshire stock [Class A] to thank him for what he had done for me and the public. Incidentally, the sale by Cialdini of hundreds of thousands of copies of a book about social psychology was a huge feat, considering that Cialdini didn't claim that he was going to improve your sex life or make you any money.

Part of Cialdini's large book-buying audience came because, like me, it wanted to learn how to become less often tricked by salesmen and circumstances. However, as an outcome not sought by Cialdini, who is a profoundly ethical man, a huge number of his books were bought by salesmen who wanted to learn how to become more effective in misleading customers. Please remember this perverse outcome when my discussion comes to incentive-caused bias as a consequence of the superpower of incentives.

With the push given by Cialdini's book, I soon skimmed through three much used textbooks covering introductory psychology. I also pondered considerably while craving synthesis and taking into account all my previous training and experience. The result was Munger's partial summary of the non-patient-treating, non-nature vs. nurture weighing parts of nondevelopmental psychology. This material was stolen from its various discoverers (most of whose names I did not even try to learn), often with new descriptions and titles selected to fit Munger's notion of what makes recall easy for Munger, then revised to make Munger's use easy as he seeks to avoid errors.

I will start my summary with a general observation that helps explain what follows. This observation is grounded in what we know about social insects. The limitations inherent in evolution's development of the nervous-system cells that control behavior are beautifully demonstrated by these insects, which often have a mere 100,000 or so cells in their entire nervous systems, compared to man's multiple billions of cells in his brain alone.

Each ant, like each human, is composed of a living physical structure plus behavioral algorithms in its nerve cells. In the ant's case, the behavioral algorithms are few in number and almost entirely genetic in origin. The ant learns a little behavior from experiences, but mostly it merely responds to ten or so stimuli with a few simple responses programmed into its nervous system by its genes, sometimes walk round and round until they perish.

It seems obvious, to me at least, that the human brain must often operate counterproductively just like the ant's, from unavoidable oversimplicity in its mental process, albeit usually in trying to solve problems more difficult than those faced by ants that don't have to design airplanes.

Naturally, the simple ant behavior system has extreme limitations because of its limited nerve system repertoire. For instance, one type of ant, when it smells a pheromone given off by a dead ant's body in the hive, immediately responds by cooperating with other ants in carrying the dead body out of the hive. And Harvard's great E.O. Wilson performed one of the best psychology experiments ever done when he painted dead-ant pheromone on a live ant. Quite naturally; the other ants dragged this useful live ant out of the hive even though it kicked and otherwise protested throughout the entire process. Such is the brain of the ant. It has a simple program of responses that generally work out all right, but which are imprudently used by rote in many cases.

Another type of ant demonstrates that the limited brain of ants can be misled by circumstances as well as by clever manipulation from other creatures. The brain of this ant contains a simple behavioral program that directs the ant, when walking, to follow the ant ahead, and when these ants stumble into walking in a big circle. The perception system of man clearly demonstrates just such an unfortunate outcome. Man is easily fooled, either by the cleverly thought out manipulation of man, by circumstances occurring by accident, or by very effective manipulation practices that man has stumbled into during "practice evolution" and kept in place because they work so well. One such outcome is caused by a quantum effect in human perception. If stimulus is kept below a certain level, it does not get through. And, for this reason, a magician was able to make the Statue of Liberty disappear after a certain amount of magician lingo expressed in the dark. The audience was not aware that it was sitting on a platform that was rotating so slowly, below man's sensory threshold, that no one could feel the acceleration implicit in the considerable rotation. When a surrounding curtain was then opened in the place on the platform where the Statue had earlier appeared, it seemed to have disappeared.

And even when perception does get through to man's brain, it is often misweighted, because what is registered in perception is in shockingness of apparent contrast, not the standard scientific units that make possible science and good engineering against often-wrong effects from generally useful tendencies in his perception and cognition.

A magician demonstrates this sort of contrast based error in your nervous system when he removes your wristwatch without your feeling it. As he does this, he applies pressure of touch on your wrist that you would

sense if it was the only pressure of touch you were experiencing. But he has concurrently applied other intense pressure of touch on your body, but not on your wrist, "swamping" the wrist pressure by creating a high-contrast touch pressure elsewhere. This high contrast takes the wrist pressure below perception.

Some psychology professors like to demonstrate the inadequacy of contrast-based perception by having students put one hand in a bucket of hot water and one hand in a bucket of cold water. They are then suddenly asked to remove both hands and place them in a single bucket of room temperature water. Now, with both hands in the same water, one hand feels as if it has just been put in cold water and the other hand feels as if it has just been placed in hot water. When one thus sees perception so easily fooled by mere contrast, where a simple temperature gauge would make no error, and realizes that cognition mimics perception in being misled by mere contrast, he is well on the way toward understanding, not only how magicians fool one, but also how life will fool one. This can occur, through deliberate human manipulation or otherwise, if one doesn't take certain precautions.

Man's often wrong but generally useful psychological tendencies are quite numerous and quite different. The natural consequence of this profusion of tendencies is the grand general principle of social psychology: cognition is ordinarily situation-dependent so that different situations often cause different conclusions, even when the same person is thinking in the same general subject area. With this introductory instruction from ants, magicians, and the grand general principle of social psychology; I will next simply number and list psychology-based tendencies that, while generally useful, often mislead. Discussion of errors from each tendency will come later, together with description of some antidotes to errors, followed by some general discussion. Here are the tendencies:

1. Reward and Punishment Superresponse Tendency
2. Liking/Loving Tendency
3. Disliking/Hating Tendency
4. Doubt-Avoidance Tendency
5. Inconsistency-Avoidance Tendency
6. Curiosity Tendency
7. Kantian Fairness Tendency
8. Envy/Jealousy Tendency
9. Reciprocation Tendency
10. Influence-from-Mere Association Tendency
11. Simple, Pain-Avoiding Psychological Denial
12. Excessive Self-Regard Tendency
13. Overoptimism Tendency
14. Deprival Superreaction Tendency
15. Social-Proof Tendency
16. Contrast-Misreaction Tendency
17. Stress-Influence Tendency
18. Availability-Misweighing Tendency
19. Use-It-or-Lose-It Tendency
20. Drug-Misinfluence Tendency
21. Senescence-Misinfluence Tendency
22. Authority-Misinfluence Tendency
23. Twaddle Tendency
24. Reason-Respecting Tendency
25. Lollapalooza Tendency – The Tendency to Get Extreme Confluences of Psychological Tendencies Acting in Favor of a Particular Outcome

1. Reward and Punishment Superresponse Tendency

I place this tendency first in my discussion because almost everyone thinks he fully recognizes how important incentives and disincentives are in changing cognition and behavior. But this is not often so. For instance, I think I've been in the top five percent of my age cohort almost all my adult life in understanding the power of incentives, and yet I've always underestimated that power. Never a year passes but I get some surprise that pushes a little further my appreciation of incentive superpower.

One of my favorite cases about the power of incentives is the Federal Express case. The integrity of the Federal Express system requires that all packages be shifted rapidly among airplanes in one central airport each night. And the system has no integrity for the customers if the night work shift can't accomplish its assignment fast. And Federal Express had one hell of a time getting the night shift to do the right thing. They tried moral suasion. They tried everything in the world without luck. And, finally, somebody got the happy thought that it was foolish to pay the night shift by the hour when what the employer wanted was not maximized billable hours of employee service but fault-free, rapid performance of a particular task. Maybe, this person thought, if they paid the employees per shift and let all night shift employees go home when all the planes were loaded, the system would work better. And, lo and behold, that solution worked.

Early in the history of Xerox, Joe Wilson, who was then in the government, had a similar experience. He had to go back to Xerox because he couldn't understand why its new machine was selling so poorly in relation to its older and inferior machine. When he got back to Xerox, he found out that the commission arrangement with the salesmen gave a large and perverse incentive to push the inferior machine on customers, who deserved a better result.

And then there is the case of Mark Twain's cat that, after a bad experience with a hot stove, never again sat on a hot stove, or a cold stove either.

We should also heed the general lesson implicit in the injunction of Ben Franklin in *Poor Richard's Almanack*: "If you would persuade, appeal to interest and not to reason." This maxim is a wise guide to a great and simple precaution in life: Never, ever, think about something else when you should be thinking about the power of incentives. I once saw a very smart house counsel for a major investment bank lose his job, with no moral fault, because he ignored the lesson in this maxim of Franklin. This counsel failed to persuade his client because he told him his moral duty, as correctly conceived by the counsel, without also telling the client in vivid terms that he was very likely to be clobbered to smithereens if he didn't behave as his counsel recommended. As a result, both client and counsel lost their careers.

We should also remember how a foolish and willful ignorance of the superpower of rewards caused Soviet communists to get their final result as described by one employee: "They pretend to pay us and we pretend to work." Perhaps the most important rule in management is "Get the incentives right."

But there is some limit to a desirable emphasis on incentive superpower. One case of excess emphasis happened at Harvard, where B. F. Skinner, a psychology professor, finally made himself ridiculous. At one time, Skinner may have been the best-known psychology professor in the world. He partly deserved his peak reputation because his early experiments using rats and pigeons were ingenious, and his results were both counterintuitive and important. With incentives, he could cause more behavior change, culminating in conditioned reflexes in his rats and pigeons, than he could in any other way. He made obvious the extreme stupidity, in dealing with children or employees, of rewarding behavior one didn't want more of. Using food rewards, he even caused strong superstitions, predesigned by himself, in his pigeons. He demonstrated again and again a great recurring, generalized behavioral algorithm in nature: "Repeat behavior that works." He also demonstrated that prompt rewards worked much better than delayed rewards in changing and maintaining behavior. And, once his rats and pigeons had conditioned reflexes, caused by food rewards, he found what withdrawal pattern of rewards kept the reflexive behavior longest in place: random distribution. With this result, Skinner thought he had pretty well explained man's misgambling compulsion whereunder he often foolishly proceeds to ruin. But, as we shall later see when we discuss other psychological tendencies that contribute to misgambling compulsion, he was only partly right. Later, Skinner lost most of his personal reputation by overclaiming for incentive superpower to the point of thinking he could create a human utopia with it and by displaying hardly any recognition of the power of the rest of psychology. He thus behaved like one of Jacob Viner's truffle hounds as he tried to explain everything with incentive effects. Nonetheless, Skinner was right in his main idea: Incentives are superpowers. The outcome of his basic experiments will always remain in high repute in the annals of experimental science. And his method of monomaniacal reliance on rewards, for many decades after his death, did more good than anything else in improving autistic children.

When I was at Harvard Law School, the professors sometimes talked about an overfocused, Skinner-like professor at Yale Law School. They used to say: "Poor old Eddie Blanchard, he thinks declaratory judgments will cure cancer." Well, that's the way Skinner got with his very extreme emphasis on incentive superpower. I always call the "Johnny-one-note" turn of mind that eventually diminished Skinner's reputation the man-with-a-hammer tendency, after the folk saying: "To a

man with only a hammer every problem looks pretty much like a nail." Man-with-a-hammer tendency does not exempt smart people like Blanchard and Skinner. And it won't exempt you if you don't watch out. I will return to man-with-a-hammer tendency at various times in this talk because, fortunately, there are effective antidotes that reduce the ravages of what pretty much ruined the personal reputation of the brilliant Skinner.

One of the most important consequences of incentive superpower is what I call "incentive caused bias." A man has an acculturated nature making him a pretty decent fellow, and yet, driven both consciously and subconsciously by incentives, he drifts into immoral behavior in order to get what he wants, a result he facilitates by rationalizing his bad behavior, like the salesmen at Xerox who harmed customers in order to maximize their sales commissions.

Here, my early education involved a surgeon who over the years sent bushel baskets full of normal gall bladders down to the pathology lab in the leading hospital in Lincoln, Nebraska, my grandfather's town. And, with that permissive quality control for which community hospitals are famous, many years after this surgeon should've been removed from the medical staff, he was. One of the doctors who participated in the removal was a family friend, and I asked him: "Did this surgeon think, `Here's a way for me to exercise my talents'" – this guy was very skilled technically – "'and make a high living by doing a few maimings and murders every year in the course of routine fraud?'" And my friend answered: "Hell no, Charlie. He thought that the gall bladder was the source of all medical evil, and, if you really loved your patients, you couldn't get that organ out rapidly enough."

Now that's an extreme case, but in lesser strength, the cognitive drift of that surgeon is present in every profession and in every human being. And it causes perfectly terrible behavior. Consider the presentations of brokers selling commercial real estate and businesses. I've never seen one that I thought was even within hailing distance of objective truth. In my long life, I have never seen a management consultant's report that didn't end with the same advice: "This problem needs more management consulting services." Widespread incentive-caused bias requires that one should often distrust, or take with a grain of salt, the advice of one's professional advisor, even if he is an engineer. The general **antidotes** here are:

1) especially fear professional advice when it is especially good for the advisor;
2) learn and use the basic elements of your advisor's trade as you deal with your advisor; and
3) double check, disbelieve, or replace much of what you're told, to the degree that seems appropriate after objective thought.

The power of incentives to cause rationalized, terrible behavior is also demonstrated by Defense Department procurement history. After the Defense Department had much truly awful experience with misbehaving contractors motivated under contracts paying on a cost-plus-a-percentage-of cost basis, the reaction of our republic was to make it a crime for a contracting officer in the Defense Department to sign such a contract, and not only a crime, but a felony.

And, by the way, although the government was right to create this new felony, much of the way the rest of the world is run, including the operation of many law firms and a lot of other firms, is still under what is, in essence, a cost-plus-a-percentage-of-cost reward system. And human nature, bedeviled by incentive-caused bias, causes a lot of ghastly abuse under these standard incentive patterns of the world. And many of the people who are behaving terribly you would be glad to have married into your family, compared to what you're otherwise likely to get.

Now there are huge implications from the fact that the human mind is put together this way. One implication is that people who create things like cash registers, which make dishonest behavior hard to accomplish, are some of the effective saints of our civilization because, as Skinner so well knew, bad behavior is intensely habit-forming when it is rewarded.

And so the cash register was a great moral instrument when it was created. And, by the way, Patterson, the great evangelist of the cash register, knew that from his own experience. He had a little store, and his employees were stealing him blind, so that he never made any money. Then people sold him a couple of cash registers, and his store went to profit immediately. He promptly closed the store and went into the cash register business, creating what became the mighty National Cash Register Company, one of the glories of its time. "Repeat behavior that works" is a behavioral guide that really succeeded for Patterson, after he applied one added twist. And so did high moral cognition. An eccentric, inveterate do-gooder (except when destroying competitors, all of which he regarded as would-be patent thieves), Patterson, like Carnegie, pretty well gave away all his money to charity before he died, always pointing out that "shrouds have no pockets." So great was the contribution of Patterson's cash register to civilization, and so effectively did he improve the cash register and spread its use, that in the end, he probably deserved the epitaph chosen for the Roman poet Horace: "I did not completely die."

The strong tendency of employees to rationalize bad conduct in order to get rewards requires many antidotes in addition to the good cash control promoted by Patterson. Perhaps the most important of these antidotes is use of sound accounting theory and practice. This was seldom better demonstrated than at Westinghouse, which had a subsidiary that made loans having no connection to the rest of Westinghouse's businesses. The officers of Westinghouse, perhaps influenced by

envy of General Electric, wanted to expand profits from loans to outsiders. Under Westinghouse's accounting practice, provisions for future credit losses on these loans depended largely on the past credit experience of its lending subsidiary, which mainly made loans unlikely to cause massive losses.

Now there are two special classes of loans that naturally cause much trouble for lenders. The first is ninety-five percent-of-value construction loans to any kind of real estate developer, and the second is any kind of construction loan on a hotel. So, naturally, if one were willing to loan approximately ninety-five percent of the real cost to a developer constructing a hotel, the loan would bear a much higher-than-normal interest rate because the credit loss danger would be much higher than normal. So, sound accounting for Westinghouse in making a big, new mass of ninety-five percent-of-value construction loans to hotel developers would have been to report almost no profit, or even a loss, on each loan until, years later, the loan became clearly worth par. But Westinghouse instead plunged into big-time construction lending on hotels, using accounting that made its lending officers look good because it showed extremely high starting income from loans that were very inferior to the loans from which the company had suffered small credit losses in the past. This terrible accounting was allowed by both international and outside accountants for Westinghouse as they displayed the conduct predicted by the refrain: "Whose bread I eat, his song I sing."

The result was billions of dollars of losses. Who was at fault? The guy from the refrigerator division, or some similar division, who as lending officer was suddenly in charge of loans to hotel developers: Or the accountants and other senior people who tolerated a nearly insane incentive structure, almost sure to trigger incentive-caused bias in a lending officer: My answer puts most blame on the accountants and other senior people who created the accounting system. These people became the equivalent of an armored car cash carrying service that suddenly decided to dispense with vehicles and have unarmed midgets hand-carry its customers' cash through slums in open bushel baskets.

I wish I could tell you that this sort of thing no longer happens, but this is not so. After Westinghouse blew up, General Electric's Kidder Peabody subsidiary put a silly computer program in place that allowed a bond trader to show immense fictional profits. And after that, much accounting became even worse, perhaps reaching its nadir at Enron.

So incentive-caused bias is a huge, important thing, with highly important **antidotes**, like the cash register and a sound accounting system. But when I came years ago to the psychology texts, I found that, while they were about one thousand pages long, there was as little therein that dealt with incentive-caused bias and no mention of Patterson or sound accounting systems. Somehow incentive-caused bias and its antidotes pretty well escaped the standard survey courses in psychology, even though incentive-caused bias had long been displayed prominently in much of the world's great literature, and antidotes to it had long existed in standard business routines. In the end, I concluded that when something was obvious in life but not easily demonstrable in certain kinds of easy, repeatable academic experiments, the truffle hounds of psychology very often missed it.

In some cases, other disciplines showed more interest in psychological tendencies than did psychology, at least as explicated in psychology textbooks. For instance, economists, speaking from the employer's point of view, have long had a name for the natural results of incentive-caused bias: "agency cost." As the name implies, the economists have typically known that, just as grain is always lost to rats, employers always lose to employees who improperly think of themselves first. Employer installed **antidotes** include:

1) tough internal audit systems,
2) severe public punishment for identified miscreants, as well as
3) misbehavior-preventing routines and such machines as cash registers.

From the employee's point of view, incentive-caused bias quite naturally causes opposing abuse from the employer: the sweatshop, the unsafe work place, etc. And these bad results for employees have **antidotes** not only in

1) pressure from unions, but also in
2) government action, such as wage and hour laws, workplace safety rules, measures fostering unionization, and workers' compensation systems.

Given the opposing psychology-induced strains that naturally occur in employment because of incentive-caused bias on both sides of the relationship, it is no wonder the Chinese are so much into Yin and Yang.

The inevitable ubiquity of incentive-caused bias has vast, generalized consequences. For instance, a sales force living only on commissions will be much harder to keep moral than one under less pressure from the compensation arrangement. On the other hand, a purely commissioned sales force may well be more efficient per dollar spent. Therefore, difficult decisions involving trade-offs are common in creating compensation arrangements in the sales function.

The extreme success of free-market capitalism as an economic system owes much to its prevention of many of bad effects from incentive-caused bias. Most capitalist owners in a vast web of free market economic activity are selected for ability by surviving in a brutal competition with other owners and have a strong incentive to prevent all waste in operations within their ownership. After all, they live on the difference between their competitive prices and their overall costs and their businesses will perish if costs exceed sales. Replace such

owners by salaried employees of the state and you will normally get a substantial reduction in overall efficiency as each employee who replaces an owner is subject to incentive-caused bias as he determines what service he will give in exchange for his salary and how much he will yield to peer pressure from many fellow employees who do not desire his creation of any strong performance model.

Another generalized consequence of incentive caused bias is that man tends to "game" all human systems, often displaying great ingenuity in wrongly serving himself at the expense of others. Antigaming features, therefore, constitute a huge and necessary part of almost all system design. Also needed in system design is an admonition: dread, and avoid as much you can, rewarding people for what can be easily faked. Yet our legislators and judges, usually including many lawyers educated in eminent universities, often ignore this injunction. And society consequently pays a huge price in the deterioration of behavior and efficiency, as well as the incurrence of unfair costs and wealth transfers. If education were improved, with psychological reality becoming better taught and assimilated, better system design might well come out of our legislatures and courts.

Of course, money is now the main reward that drives habits. A monkey can be trained to seek and work for an intrinsically worthless token, as if it were a banana, if the token is routinely exchangeable for a banana. So it is also with humans working for money – only more so, because human money is exchangeable for many desired things in addition to food, and one ordinarily gains status from either holding or spending it. Moreover, a rich person will often, through habit, work or connive energetically for more money long after he has almost no real need for more. Averaged out, money is a mainspring of modern civilization, having little precedent in the behavior of nonhuman animals. Money rewards are also intertwined with other forms of reward. For instance, some people use money to buy status and others use status to get money, while still others sort of do both things at the same time.

Although money is the main driver among rewards, it is not the only reward that works. People also change their behavior and cognition for sex, friendship, companionship, advancement in status, and other nonmonetary items.

"Granny's Rule" provides another example of reward superpower, so extreme in its effects that it must be mentioned here. You can successfully manipulate your own behavior with this rule, even if you are using as rewards items that you already possess! Indeed, consultant Ph.D. psychologists often urge business organizations to improve their reward systems by teaching executives to use "Granny's Rule" to govern their own daily behavior. Granny's Rule, to be specific, is the requirement that children eat their carrots before they get dessert. And the business version requires that executives force themselves daily to first do their unpleasant and necessary tasks before rewarding themselves by proceeding to their pleasant tasks. Given reward superpower, this practice is nice and sound. Moreover, the rule can also be used in the nonbusiness part of life. The emphasis on daily use of this practice is not accidental. The consultants well know, after the teaching of Skinner, that prompt rewards work best.

Punishments, of course, also strongly influence behavior and cognition, although not so flexibly and wonderfully as rewards. For instance, illegal price fixing was fairly common in America when it was customarily punished by modest fines. Then, after a few prominent business executives were removed from their eminent positions and sent to federal prisons, price-fixing behavior was greatly reduced.

Military and naval organizations have very often been extreme in using punishment to change behavior, probably because they needed to cause extreme behavior. Around the time of Caesar, there was a European tribe that, when the assembly horn blew, always killed the last warrior to reach his assigned place, and no one enjoyed fighting this tribe. And George Washington hanged farm-boy deserters forty feet high as an example to others who might contemplate desertion.

2. Liking/Loving Tendency

A newly hatched baby goose is programmed, through the economy of its genetic program, to "love" and follow the first creature that is nice to it, which is almost always its mother. But, if the mother goose is not present right after the hatching, and a man is there instead, the gosling will "love" and follow the man, who becomes a sort of substitute mother.

Somewhat similarly, a newly arrived human is "born to like and love" under the normal and abnormal triggering outcomes for its kind. Perhaps the strongest inborn tendency to love – ready to be triggered – is that of the human mother for its child. On the other hand, the similar "child-loving" behavior of a mouse can be eliminated by the deletion of a single gene, which suggests there is some sort of triggering gene in a mother mouse as well as in a gosling.

Each child, like a gosling, will almost surely come to like and love, not only as driven by its sexual nature, but also in social groups not limited to its genetic or adoptive "family." Current extremes of romantic love almost surely did not occur in man's remote past. Our early human ancestors were surely more like apes triggered into mating in a pretty mundane fashion.

And what will a man naturally come to like and love, apart from his parent, spouse and child? Well, he will like and love being liked and loved. And so many a courtship competition will be won by a person displaying exceptional devotion, and man will generally strive, lifelong, for the affection and approval of many people not related to him.

One very practical consequence of Liking/Loving Tendency is that it acts as a conditioning device that makes the liker or lover tend:

1) to ignore faults of, and comply with wishes of, the object of his affection,
2) to favor people, products, and actions merely associated with the object of his affection (as we shall see when we get to "Influence-from-Mere-Association Tendency," and
3) to distort other facts to facilitate love.

There are large social policy implications in the amazingly good consequences that ordinarily come from people likely to trigger extremes of love and admiration boosting each other in a feedback mode. For instance, it is obviously desirable to attract a lot of lovable, admirable people into the teaching profession. The phenomenon of liking and loving causing admiration also works in reverse. Admiration also causes or intensifies liking or love. With this "feedback mode" in place, the consequences are often extreme, sometimes even causing deliberate self-destruction to help what is loved.

Liking or loving, intertwined with admiration in a feedback mode, often has vast practical consequences in areas far removed from sexual attachments. For instance, a man who is so constructed that he loves admirable persons and ideas with a special intensity has a huge advantage in life. This blessing came to both Buffett and myself in large measure, sometimes from the same persons and ideas. One common, beneficial example for us both was Warren's uncle, Fred Buffett, who cheerfully did the endless grocery-store work that Warren and I ended up admiring from a safe distance. Even now, after I have known so many other people, I doubt if it is possible to be a nicer man than Fred Buffett was, and he changed me for the better.

3. Disliking/Hating Tendency

In a pattern obverse to Liking/Loving Tendency, the newly arrived human is also "born to dislike and hate" as triggered by normal and abnormal triggering forces in its life. It is the same with most apes and monkeys.

As a result, the long history of man contains almost continuous war. For instance, most American Indian tribes warred incessantly, and some tribes would occasionally bring captives home to women so that all could join in the fun of torturing captives to death. Even with the spread of religion, and the advent of advanced civilization, much modern war remains pretty savage. But we also get what we observe in present-day Switzerland and the United States, wherein the clever political arrangements of man "channel" the hatreds and dislikings of individuals and groups into nonlethal patterns including elections.

But the dislikings and hatreds never go away completely. Born into man, these driving tendencies remain strong. Thus, we get maxims like the one from England: "Politics is the art of marshalling hatreds." And we also get the extreme popularity of very negative political advertising in the United States.

At the family level, we often see one sibling hate his other siblings and litigate with them endlessly if he can afford it. Indeed, Warren Buffett has repeatedly explained to me that "a major difference between rich and poor people is that the rich people can spend their lives suing their relatives." My father's law practice in Omaha was full of such intrafamily hatreds. And when I got to the Harvard Law School and its professors taught me "property law" with no mention of sibling rivalry in the family business, I appraised the School as a pretty unrealistic place that wore "blinders" like the milk-wagon horses of yore. My current guess is that sibling rivalry has not yet made it into property law as taught at Harvard.

Disliking/Hating Tendency also acts as a conditioning device that makes the disliker/hater tend to:

1) ignore virtues in the object of dislike,
2) dislike people, products, and actions merely associated with the object of his dislike, and
3) distort other facts to facilitate hatred.

Distortion of that kind is often so extreme that miscognition is shockingly large. When the world Trade Center was destroyed, many Muslims immediately concluded that the Hindus did it, while many Arabs concluded that the Jews did it. Such factual distortions often make mediation between opponents locked in hatred either difficult or impossible. Mediations between Israelis and Palestinians are difficult because facts in one side's history overlap very little with facts from the other side's.

4. Doubt-Avoidance Tendency

The brain of man is programmed with a tendency to quickly remove doubt by reaching some decision. It is easy to see how evolution would make animals, over the eons, drift toward such quick elimination of doubt. After all, the one thing that is surely counterproductive for a prey animal that is threatened by a predator is to take a long time in deciding what to do. And so man's Doubt Avoidance Tendency is quite consistent with the history of his ancient, nonhuman ancestors.

So pronounced is the tendency in man to quickly remove doubt by reaching some decision that behavior to counter the tendency is required from judges and jurors. Here, delay before decision making is forced. And one is required to so comport himself, prior to conclusion time, so that he is wearing a "mask" of objectivity. And the "mask" works to help real objectivity along, as we shall see when we next consider man's Inconsistency-Avoidance Tendency.

Of course, once one has recognized that man has a strong Doubt-Avoidance Tendency, it is logical to believe that at least some leaps of religious faith are greatly boosted by this tendency. Even if one is satisfied that his own faith comes from revelation, one still must account for the inconsistent faiths of others. And man's Doubt-

Avoidance Tendency is almost surely a big part of the answer.

What triggers Doubt-Avoidance Tendency? Well, an unthreatened man, thinking of nothing in particular, is not being prompted to remove doubt through rushing to some decision. As we shall see later when we get to Social-Proof Tendency and Stress-Influence Tendency, what usually triggers Doubt-Avoidance Tendency is some combination of puzzlement and stress. Both of these factors naturally occur in facing religious issues. Thus, the natural state of most men is in some form of doubt-removing religious faith.

5. Inconsistency-Avoidance Tendency

The brain of man conserves programming space by being reluctant to change, which is a form of inconsistency avoidance. We see this in all human habits, constructive and destructive. Few people can list a lot of bad habits that they have eliminated, and some people cannot identify even one of these. Instead, practically everyone has a great many bad habits he has long maintained despite their being known as bad. Given this situation, it is not too much in many cases to appraise early-formed habits as destiny. When Marley's miserable ghost says, "I wear the chains I forged in life," he is talking about chains of habit that were too light to be felt before they became too strong to be broken.

The rare life that is wisely lived has in it many good habits maintained and many bad habits avoided or cured. And the great rule that helps here is again from Franklin's *Poor Richard's Almanack:* "An ounce of prevention is worth a pound of cure." What Franklin is here indicating, in part, is that Inconsistency-Avoidance Tendency makes it much easier to prevent a habit than to change it.

Also tending to be maintained in place by the anti-change tendency of the brain are one's previous conclusions, human loyalties, reputational identity, commitments, accepted role in a civilization, etc. It is not entirely clear why evolution would program into man's brain an anti-change mode alongside his tendency to quickly remove doubt. My guess is the anti-change mode was significantly caused by a combination of the following factors:

1) It facilitated faster decisions when speed of decision was an important contribution to the survival of nonhuman ancestors that were prey.
2) It facilitated the survival advantage that our ancestors gained by cooperating in groups, which would have been more difficult to do if everyone was always changing responses.
3) It was the best form of solution that evolution could get to in the limited number of generations between the start of literacy and today's complex modern life.

It is easy to see that a quickly reached conclusion, triggered by Doubt-Avoidance Tendency, when combined with a tendency to resist any change in that conclusion, will naturally cause a lot of errors in cognition for modern man. And so it observably works out. We all deal much with others whom we correctly diagnose as imprisoned in poor conclusions that are maintained by mental habits they formed early and will carry to their graves.

So great is the bad-decision problem caused by Inconsistency-Avoidance Tendency that our courts have adopted important strategies against it. For instance, before making decisions, judges and juries are required to hear long and skillful presentations of evidence and argument from the side they will not naturally favor, given their ideas in place. And this helps prevent considerable bad thinking from "first conclusion bias." Similarly, other modern decision makers will often force groups to consider skillful counterarguments before making decisions.

And proper education is one long exercise in augmentation of high cognition so that our wisdom becomes strong enough to destroy wrong thinking, maintained by resistance to change. As Lord Keynes pointed out about his exalted intellectual group at one of the greatest universities in the world, it was not the intrinsic difficulty of new ideas that prevented their acceptance. Instead, the new ideas were not accepted because they were inconsistent with old ideas in place. What Keynes was reporting is that the human mind works a lot like the human egg. When one sperm gets into a human egg, there's an automatic shut-off device that bars any other sperm from getting in. The human mind tends strongly toward the same sort of result.

And so, people tend to accumulate large mental holdings of fixed conclusions and attitudes that are not often reexamined or changed, even though there is plenty of good evidence that they are wrong.

Moreover, this doesn't just happen in social science departments, like the one that once thought Freud should serve as the only choice as a psychology teacher for Caltech. Holding to old errors even happens, although with less frequency and severity, in hard science departments. We have no less an authority for this than Max Planck, Nobel laureate, finder of "Planck's constant." Planck is famous not only for his science but also for saying that even in physics the radically new ideas are seldom really accepted by the old guard. Instead, said Planck, the progress is made by a new generation that comes along, less brain-blocked by its previous conclusions. Indeed, precisely this sort of brain-blocking happened to a degree in Einstein. At his peak, Einstein was a great destroyer of his own ideas, but an older Einstein never accepted the full implications of quantum mechanics.

One of the most successful users of an antidote to first conclusion bias was Charles Darwin. He trained himself, early, to intensively consider any evidence tending to disconfirm any hypothesis of his, more so if he

thought his hypothesis was a particularly good one. The opposite of what Darwin did is now called confirmation bias, a term of opprobrium. Darwin's practice came from his acute recognition of man's natural cognitive faults arising from Inconsistency-Avoidance Tendency. He provides a great example of psychological insight correctly used to advance some of the finest mental work ever done.

Inconsistency-Avoidance Tendency has many good effects in civilization. For instance, rather than act inconsistently with public commitments, new or old public identities, etc., most people are more loyal in their roles in life as priests, physicians, citizens, soldiers, spouses, teachers, employees, etc.

One corollary of Inconsistency-Avoidance Tendency is that a person making big sacrifices in the course of assuming a new identity will intensify his devotion to the new identity. After all, it would be quite inconsistent behavior to make a large sacrifice for something that was no good. And thus civilization has invented many tough and solemn initiation ceremonies, often public in nature, that intensify new commitments made.

Tough initiation ceremonies can intensify bad contact as well as good. The loyalty of the new, "made-man" mafia member, or of the military officer making the required "blood oath" of loyalty to Hitler, was boosted through the triggering of Inconsistency-Avoidance Tendency.

Moreover, the tendency will often make man a "patsy" of manipulative "compliance-practitioners," who gain advantage from triggering his subconscious Inconsistency-Avoidance Tendency. Few people demonstrated this process better than Ben Franklin. As he was rising from obscurity in Philadelphia and wanted the approval of some important man, Franklin would often maneuver that man into doing Franklin some unimportant favor, like lending Franklin a book. Thereafter, the man would admire and trust Franklin more because a nonadmired and nontrusted Franklin would be inconsistent with the appraisal implicit in lending Franklin the book.

During the Korean War, this technique of Franklin's was the most important feature of the Chinese brainwashing system that was used on enemy prisoners. Small step by small step, the technique often worked better than torture in altering prisoner cognition in favor of Chinese captors.

The practice of Franklin, whereunder he got approval from someone by maneuvering him into treating Franklin favorably, works viciously well in reverse. When one is maneuvered into deliberately hurting some other person, one will tend to disapprove or even hate that person. This effect, from Inconsistency-Avoidance Tendency, accounts for the insight implicit in the saying: "A man never forgets where he has buried the hatchet." The effect accounts for much prisoner abuse by guards, increasing their dislike and hatred for prisoners that exists as a consequence of the guards' reciprocation of hostility from prisoners who are treated like animals. Given the psychology-based hostility natural in prisons between guards and prisoners, an intense, continuous effort should be made to prevent prisoner abuse from starting and to stop it instantly when it starts because it will grow by feeding on itself, like a cluster of infectious disease. More psychological acuity on this subject, aided by more insightful teaching, would probably improve the overall effectiveness of the U.S. Army.

So strong is Inconsistency-Avoidance Tendency that it will often prevail after one has merely pretended to have some identity, habit, or conclusion. Thus, for a while, many an actor sort of believes he is Hamlet, Prince of Denmark. And many a hypocrite is improved by his pretensions of virtue. And many a judge and juror, while pretending objectivity, is gaining objectivity. And many a trial lawyer or other advocate comes to believe what he formerly only pretended to believe.

While Inconsistency-Avoidance Tendency, with its "status quo bias," immensely harms sound education, it also causes much benefit. For instance, a near-ultimate inconsistency would be to teach something to others that one did not believe true. And so, in clinical medical education, the learner is forced to "see one, do one, and then teach one," with the teaching pounding the learning into the teacher. Of course, the power of teaching to influence the cognition of the teacher is not always a benefit to society. When such power flows into political and cult evangelism, there are often bad consequences.

For instance, modern education often does much damage when young students are taught dubious political notions and then enthusiastically push these notions on the rest of us. The pushing seldom convinces others. But as students pound into their mental habits what they are pushing out, the students are often permanently damaged. Educational institutions that create a climate where much of this goes on are, I think, irresponsible. It is important not to thus put one's brain in chains before one has come anywhere near his full potentiality as a rational person.

6. Curiosity Tendency

There is a lot of innate curiosity in mammals, but its nonhuman version is highest among apes and monkeys. Man's curiosity, in turn, is much stronger than that of his simian relatives. In advanced human civilization, culture greatly increases the effectiveness of curiosity in advancing knowledge. For instance, Athens (including its colony, Alexandria) developed much math and science out of pure curiosity while the Romans made almost no contribution to either math or science. They instead concentrated their attention on the "practical" engineering of mines, roads, aqueducts, etc. Curiosity, enhanced by the best of modern education (which is by definition a minority part in many places), much helps man to prevent or reduce bad consequences arising

from other psychological tendencies. The curious are also provided with much fun and wisdom long after formal education has ended.

7. Kantian Fairness Tendency

Kant was famous for his "categorical imperative," a sort of a "golden rule" that required humans to follow those behavior patterns that, if followed by all others, would make the surrounding human system work best for everybody. And it is not too much to say that modern acculturated man displays, and expects from others, a lot of fairness as thus defined by Kant.

In a small community having a one-way bridge or tunnel for autos, it is the norm in the United States to see a lot of reciprocal courtesy, despite the absence of signs or signals. And many freeway drivers, including myself, will often let other drivers come in front of them, in lane changes or the like, because that is the courtesy they desire when roles are reversed. Moreover, there is, in modern human culture, a lot of courteous lining up by strangers so that all are served on a "first-come-first-served" basis.

Also, strangers often voluntarily share equally in unexpected, unearned good and bad fortune. And, as an obverse consequence of such "fair-sharing" conduct, much reactive hostility occurs when fairsharing is expected yet not provided.

It is interesting how the world's slavery was pretty well abolished during the last three centuries after being tolerated for a great many previous centuries during which it coexisted with the world's major religions. My guess is that Kantian Fairness Tendency was a major contributor to this result.

8. Envy/Jealousy Tendency

A member of a species designed through evolutionary process to want often-scarce food is going to be driven strongly toward getting food when it first sees food. And this is going to occur often and tend to create some conflict when the food is seen in the possession of another member of the same species. This is probably the evolutionary origin of the Envy/Jealousy Tendency that lies so deep in human nature. Sibling jealousy is clearly very strong and usually greater in children than adults. It is often stronger than jealousy directed at strangers. Kantian Fairness Tendency probably contributes to this result.

Envy/jealousy is extreme in myth, religion, and literature wherein, in account after account, it triggers hatred and injury. It was regarded as so pernicious by the Jews of the civilization that preceded Christ that it was forbidden, by phrase after phrase, in the laws of Moses. You were even warned by the Prophet not to covet your neighbor's donkey.

And envy/jealousy is also extreme in modern life. For instance, university communities often go bananas when some university employee in money management, or some professor in surgery, gets annual compensation in multiples of the standard professorial salary. And in modern investment banks, law firms, etc., the envy/jealousy effects are usually more extreme than they are in university faculties. Many big law firms, fearing disorder from envy/jealousy, have long treated all senior partners alike in compensation, no matter how different their contributions to firm welfare. As I have shared the observation of life with Warren Buffett over decades, I have heard him wisely say on several occasions: "It is not greed that drives the world, but envy."

And, because this is roughly right, one would expect a vast coverage of envy/jealousy in psychology textbooks. But no such vast coverage existed when I read my three textbooks. Indeed, the very words "envy" and "jealousy" were often absent from the index.

Nondiscussion of envy/jealousy is not a phenomenon confined to psychology texts. When did any of you last engage in any large group discussion of some issue wherein adult envy/jealousy was identified as the cause of someone's argument? There seems to be a general taboo against any such claim. If so, what accounts for the taboo?

My guess is that people widely and generally sense that labeling some position as driven by envy/jealousy will be regarded as extremely insulting to the position taker, possibly more so when the diagnosis is correct than when it is wrong. And if calling a position "envy-driven" is perceived as the equivalent of describing its holder as a childish mental basket case, then it is quite understandable how a general taboo has arisen.

But should this general taboo extend to psychology texts when it creates such a large gap in the correct, psychological explanation of what is widespread and important? My answer is no.

9. Reciprocation Tendency

The automatic tendency of humans to reciprocate both favors and disfavors has long been noticed as it is in apes, monkeys, dogs, and many less cognitively gifted animals. The tendency facilitates group cooperation for the benefit of members. In this respect, it mimics much genetic programming of the social insects. We see the extreme power of the tendency to reciprocate disfavors in some wars, wherein it increases hatred to a level causing very brutal conduct. For long stretches in many wars, no prisoners were taken; the only acceptable enemy a dead one. And sometimes that was not enough, as in the case of Genghis Khan, who was not satisfied with corpses. He insisted on their being hacked into pieces.

One interesting mental exercise is to compare Genghis Khan, who exercised extreme, lethal hostility toward other men, with ants that display extreme, lethal hostility toward members of their own species that are not part of their breeding colony. Genghis looks sweetly lovable when compared to the ants. The ants are more disposed to fight and fight with more extreme cruelty.

Indeed, E. O. Wilson once waggishly suggested that if ants were suddenly to get atom bombs, all ants would be dead within eighteen hours. What both human and ant history suggest is

1) that nature has no general algorithm making intra-species, turn-the-other-cheek behavior a booster of species survival;
2) that it is not clear that a country would have good prospects were it to abandon all reciprocate-disfavor tendency directed at outsiders; and
3) if turn-the-other-cheek behavior is a good idea for a country as it deals with outsiders, man's culture is going to have to do a lot of heavy lifting because his genes won't be of much help.

I next turn to man's reciprocated hostility that falls well short of war. Peacetime hostility can be pretty extreme, as in many modern cases of "road rage" or injury-producing temper tantrums on athletic fields.

The standard antidote to one's overactive hostility is to train oneself to defer reaction. As my smart friend Tom Murphy so frequently says, "You can always tell the man off tomorrow, if it is such a good idea."

Of course, the tendency to reciprocate favor for favor is also very intense, so much so that it occasionally reverses the course of reciprocated hostility. Weird pauses in fighting have sometimes occurred right in the middle of wars, triggered by some minor courtesy or favor on the part of one side, followed by favor reciprocation from the other side, and so on, until fighting stopped for a considerable period. This happened more than once in the trench warfare of World War I, over big stretches of the front and much to the dismay of the generals.

It is obvious that commercial trade, a fundamental cause of modern prosperity, is enormously facilitated by man's innate tendency to reciprocate favors. In trade, enlightened self-interest joining with Reciprocation Tendency results in constructive conduct. Daily interchange in marriage is also assisted by Reciprocation Tendency, without which marriage would lose much of its allure.

And Reciprocation Tendency, insomuch as it causes good results, does not join forces only with the superpower of incentives. It also joins Inconsistency-Avoidance Tendency in helping cause:

1) the fulfillment of promises made as part of a bargain, including loyalty promises in marriage ceremonies, and
2) correct behavior expected from persons serving as priests, shoemakers, physicians, and all else.

Like other psychological tendencies, and also man's ability to turn somersaults, reciprocate-favor tendency operates to a very considerable degree at a subconscious level. This helps make the tendency a strong force that can sometimes be used by some men to mislead others, which happens all the time.

For instance, when an automobile salesman graciously steers you into a comfortable place to sit and gives you a cup of coffee, you are very likely being tricked, by this small courtesy alone, into parting with an extra five hundred dollars. This is far from the most extreme case of sales success that is rooted in a salesman dispensing minor favors. However, in this scenario of buying a car, you are going to be disadvantaged by parting with an extra five hundred dollars of your own money. This potential loss will protect you to some extent.

But suppose you are the purchasing agent of someone else – a rich employer, for instance. Now the minor favor you receive from the salesman is less opposed by the threat of extra cost to you because someone else is paying the extra cost. Under such circumstances, the salesman is often able to maximize his advantage, particularly when government is the purchaser.

Wise employers, therefore, try to oppose reciprocate-favor tendencies of employees engaged in purchasing. The simplest antidote works best: Don't let them accept any favors from vendors. Sam Walton agreed with this idea of absolute prohibition. He wouldn't let purchasing agents accept so much as a hot dog from a vendor. Given the subconscious level at which much Reciprocation Tendency operates, this policy of Walton's was profoundly correct. If I controlled the Defense Department, its policies would mimic Walton's.

In a famous psychology experiment, Cialdini brilliantly demonstrated the power of "compliance practitioners" to mislead people by triggering their subconscious Reciprocation Tendency.

Carrying out this experiment, Cialdini caused his "compliance practitioners" to wander around his campus and ask strangers to supervise a bunch of juvenile delinquents on a trip to a zoo. Because this happed on a campus, one person in six out of a large sample actually agreed to do this. After accumulating this one-in-six statistic, Cialdini changed his procedure. His practitioners next wandered around the campus asking strangers to devote a big chunk of time every week for two years to the supervision of juvenile delinquents. This ridiculous request got him a one hundred percent rejection rate. But the practitioner had a follow-up question: "Will you at least spend one afternoon taking juvenile delinquents to a zoo?" This raised Cialdini's former acceptance rate of 1/6 to ½ – a tripling.

What Cialdini's "compliance practitioners" had done was make a small concession, which was reciprocated by a small concession from the other side. This subconscious reciprocation of a concession by Cialdini's experimental subjects actually caused a much increased percentage of them to end up irrationally agreeing to go to a zoo with juvenile delinquents. Now, a professor who can invent an experiment like that, which so powerfully demonstrates something so important, deserves much recognition in the wider world, which he indeed got to the credit of many universities that learned a great

deal from Cialdini.

Why is Reciprocation Tendency so important? Well, consider the folly of having law students graduate, and go out in the world representing clients in negotiations, not knowing the nature of the subconscious processes of the mind as exhibited in Cialdini's experiment. Yet such folly was prevalent in the law schools of the world for decades, in fact, generations. The correct name for that is educational malpractice. The law schools didn't know, or care to teach, what Sam Walton so well knew.

The importance and power of reciprocate-favor tendency was also demonstrated in Cialdini's explanation of the foolish decision of the attorney general of the United States to authorize the Watergate burglary. There, an aggressive subordinate made some extreme proposal for advancing Republican interests through use of some combination of whores and a gigantic yacht. When this ridiculous request was rejected, the subordinate backed off, in gracious concession, to merely asking for consent to a burglary, and the attorney general went along. Cialdini believes that subconscious Reciprocation Tendency thus became one important cause of the resignation of a United States president in the Watergate debacle, and so do I. Reciprocation Tendency subtly causes many extreme and dangerous consequences, not just on rare occasions but pretty much all the time.

Man's belief in reciprocate-favor tendency, following eons of his practicing it, has done some queer and bad things in religions. The ritualized murder of the Phoenicians and the Aztecs, in which they sacrificed human victims to their gods, was a particularly egregious example. And we should not forget that as late as the Punic Wars, the civilized Romans, out of fear of defeat, returned in a few instances to the practice of human sacrifice. On the other hand, the reciprocity-based, religion-boosting idea of obtaining help from God in reciprocation for good human behavior has probably been vastly constructive.

Overall, both inside and outside religions, it seems clear to me that Reciprocation Tendency's constructive contributions to man far outweigh its destructive effects. In cases of psychological tendencies being used to counter or prevent bad results from one or more other psychological tendencies – for instance, in the case of interventions to end chemical dependency – you will usually find Reciprocation Tendency performing strongly on the constructive side.

And the very best part of human life probably lies in relationships of affection wherein parties are more interested in pleasing than being pleased – a not uncommon outcome in display of reciprocate favor tendency.

Before we leave reciprocate-favor tendency, the final phenomenon we will consider is widespread human misery from feelings of guilt. To the extent the feeling of guilt has an evolutionary base, I believe the most plausible cause is the mental conflict triggered in one direction by reciprocate favor tendency and in the opposite direction by Reward Superresponse Tendency pushing one to enjoy one hundred percent of some good thing. Of course, human culture has often greatly boosted the genetic tendency to suffer from feelings of guilt. Most especially, religious culture has imposed hard-to-follow ethical and devotional demands on people. There is a charming Irish Catholic priest in my neighborhood who, with rough accuracy, often says, "The old Jews may have invented guilt, but we Catholics perfected it." And if you, like me and this priest, believe that, averaged out, feelings of guilt do more good than harm, you may join in my special gratitude for reciprocate-favor tendency; no matter how unpleasant you find feelings of guilt.

10. Influence-from-Mere-Association Tendency

In the standard conditioned reflexes studied by Skinner and most common in the world, responsive behavior, creating a new habit, is directly triggered by rewards previously bestowed. For instance, a man buys a can of branded shoe polish, has a good experience with it when shining his shoes, and because of this "reward," buys the same shoe polish when he needs another can.

But there is another type of conditioned reflex wherein mere association triggers a response. For instance, consider the case of many men who have been trained by their previous experience in life to believe that when several similar items are presented for purchase, the one with the highest price will have the highest quality. Knowing this, some seller of an ordinary industrial product will often change his product's trade dress and raise its price significantly hoping that quality-seeking buyers will be tricked into becoming purchasers by mere association of his product and its high price. This industrial practice frequently is effective in driving up sales and even more so in driving up profits. For instance, it worked wonderfully with high-priced power tools for a long time. And it would work better yet with highpriced pumps at the bottom of oil wells. With luxury goods, the process works with a special boost because buyers who pay high prices often gain extra status from thus demonstrating both their good taste and their ability to pay.

Even association that appears to be trivial, if carefully planned, can have extreme and peculiar effects on purchasers of products. The target purchaser of shoe polish may like pretty girls. And so he chooses the polish with the pretty girl on the can or the one with the pretty girl in the last ad for shoe polish that he saw.

Advertisers know about the power of mere association. You won't see Coke advertised alongside some account of the death of a child. Instead, Coke ads picture life as happier than reality.

Similarly, it is not from mere chance that military bands play such impressive music. That kind of music, appearing in mere association with military service, helps

to attract soldiers and keep them in the army. Most armies have learned to use mere association in this successful way.

However, the most damaging miscalculations from mere association do not ordinarily come from advertisers and music providers.

Some of the most important miscalculations come from what is accidentally associated with one's past success, or one's liking and loving, or one's disliking and hating, which includes a natural hatred for bad news.

To avoid being misled by the mere association of some fact with past success, use this memory clue. Think of Napoleon and Hitler when they invaded Russia after using their armies with much success elsewhere. And there are plenty of mundane examples of results like those of Napoleon and Hitler. For instance, a man foolishly gambles in a casino and yet wins. This unlikely correlation causes him to try the casino again, or again and again, to his horrid detriment. Or a man gets lucky in an odds-against venture headed by an untalented friend. So influenced, he tries again what worked before – with terrible results.

The proper **antidotes** to being made such a patsy by past success are:

1) to carefully examine each past success, looking for accidental, noncausative factors associated with such success that will tend to mislead as one appraises odds implicit in a proposed new undertaking, and
2) to look for dangerous aspects of the new undertaking that were not present when past success occurred.

The damage to the mind that can come from liking and loving was once demonstrated by obviously false testimony given by an otherwise very admirable woman, the wife of a party in a jury case. The famous opposing counsel wanted to minimize his attack on such an admirable woman yet destroy the credibility of her testimony. And so, in his closing argument, he came to her testimony last. He then shook his head sadly and said, "What are we to make of such testimony? The answer lies in the old rhyme:

> As the husband is, So the wife is.
> She is married to a clown,
> And the grossness of his nature Drags her down."

The jury disbelieved the woman's testimony. They easily recognized the strong misinfluence of love on her cognition. And we now often see even stronger misinfluence from love as tearful mothers, with heartfelt conviction, declare before TV cameras the innocence of their obviously guilty sons.

People disagree about how much blindness should accompany the association called love. In *Poor Richard's Almanack* Franklin counseled: "Keep your eyes wide open before marriage and half shut thereafter." Perhaps this "eyes-half-shut" solution is about right, but I favor a tougher prescription: "See it like it is and love anyway."

Hating and disliking also cause miscalculation triggered by mere association. In business, I commonly see people underappraise both the competency and morals of competitors they dislike. This is a dangerous practice, usually disguised because it occurs on a subconscious basis.

Another common bad effect from the mere association of a person and a hated outcome is displayed in "Persian Messenger Syndrome." Ancient Persians actually killed some messengers whose sole fault was that they brought home truthful bad news, say, of a battle lost. It was actually safer for the messenger to run away and hide, instead of doing his job as a wiser boss would have wanted it done.

And Persian Messenger Syndrome is alive and well in modern life, albeit in less lethal versions. It is actually dangerous in many careers to be a carrier of unwelcome news. Union negotiators and employer representatives often know this, and it leads to many tragedies in labor relations. Sometimes lawyers, knowing their clients will hate them if they recommend an unwelcome but wise settlement, will carry on to disaster. Even in places well known for high cognition, one will sometimes find Persian Messenger Syndrome. For instance, years ago, two major oil companies litigated in a Texas trial court over some ambiguity in an operating agreement covering one of the largest oil reservoirs in the Western hemisphere. My guess is that the cause of the trial was some general counsel's unwillingness to carry bad news to a strong-minded CEO.

CBS, in its late heyday, was famous for occurrence of Persian Messenger Syndrome because Chairman Bill Paley was hostile to people who brought him bad news. The result was that Paley lived in a cocoon of unreality, from which he made one bad deal after another, even exchanging a large share of CBS for a company that had to be liquidated shortly thereafter.

The proper antidote to creating Persian Messenger Syndrome and its bad effects, like those at CBS, is to develop, through exercise of will, a habit of welcoming bad news. At Berkshire, there is a common injunction: "Always tell us the bad news promptly. It is only the good news that can wait." It also helps to be so wise and informed that people fear not telling you bad news because you are so likely to get it elsewhere.

Influence-from-Mere-Association Tendency often has a shocking effect that helps swamp the normal tendency to return favor for favor, [especially when the favor recipient's] condition is unpleasant, due to poverty, sickness, subjugation, or something else. Sometimes, when one receives a favor, the favor may trigger an envy-driven dislike for the person who was in so favorable a state that he could easily be a favor giver. Under such circumstances, the favor receiver, prompted partly by mere association of the favor giver with past

pain, will not only dislike the man who helped him but also try to injure him. This accounts for a famous response, sometimes dubiously attributed to Henry Ford: "Why does that man hate me so? I never did anything for him."

I have a friend, whom I will now call "Glotz," who had an amusing experience in favor-giving. Glotz owned an apartment building that he had bought because he wanted, eventually, to use the land in different development. Pending this outcome, Glotz was very lenient in collecting below-market rents from tenants. When, at last, there was a public hearing on Glotz's proposal to tear down the building, one tenant who was far behind in his rent payments was particularly angry and hostile. He came to the public hearing and said, "This proposal is outrageous. Glotz doesn't need any more money. I know this because I was supported in college by Glotz fellowships."

A final serious clump of bad thinking caused by mere association lies in the common use of classification stereotypes. Because Pete knows that Joe is ninety years old and that most ninety-year-old persons don't think very well, Pete appraises old Joe as a thinking klutz even if old Joe still thinks very well. Or, because Jane is a white-haired woman, and Pete knows no old women good at higher math, Pete appraises Jane as no good at it even if Jane is a whiz. This sort of wrong thinking is both natural and common. Pete's **antidote** is not to believe that, on average, ninety-year-olds think as well as forty year-olds or that there are as many females as males among Ph.D.'s in math. Instead, just as he must learn that trend does not always correctly predict destiny, he must learn that the average dimension in some group will not reliably guide him to the dimension of some specific item. Otherwise Pete will make many errors, like that of the fellow who drowned in a river that averaged out only eighteen inches deep.

11. Simple, Pain-Avoiding Psychological Denial

This phenomenon first hit me hard in World War II when the superathlete, superstudent son of a family friend flew off over the Atlantic Ocean and never came back. His mother, who was a very sane woman, then refused to believe he was dead. That's Simple, Pain-Avoiding Psychological Denial. The reality is too painful to bear, so one distorts the facts until they become bearable. We all do that to some extent, often causing terrible problems. The tendency's most extreme outcomes are usually mixed up with love, death, and chemical dependency.

Where denial is used to make dying easier, the conduct meets almost no criticism. Who would begrudge a fellow man such help at such a time? But some people hope to leave life hewing to the iron prescription, "It is not necessary to hope in order to persevere." And there is something admirable in anyone able to do this.

In chemical dependency, wherein morals usually break down horribly, addicted persons tend to believe that they remain in respectable condition, with respectable prospects. They thus display an extremely unrealistic denial of reality as they go deeper and deeper into deterioration. In my youth, Freudian remedies failed utterly in reversing chemical dependency, but nowadays Alcoholics Anonymous routinely achieves a fifty percent cure rate by causing several psychological tendencies to act together to counter addiction. However, the cure process is typically difficult and draining, and a fifty percent success rate implies a fifty percent failure rate. One should stay far away from any conduct at all likely to drift into chemical dependency. Even a small chance of suffering so great a damage should be avoided.

12. Excessive Self-Regard Tendency

We all commonly observe the excessive self-regard of man. He mostly misappraises himself on the high side, like the ninety percent of Swedish drivers that judge themselves to be above average. Such misappraisals also apply to a person's major "possessions." One spouse usually overappraises the other spouse. And a man's children are likewise appraised higher by him than they are likely to be in a more objective view. Even man's minor possessions tend to be overappraised. Once owned, they suddenly become worth more to him than he would pay if they were offered for sale to him and he didn't already own them. There is a name in psychology for this overappraisal-of-our-own-possessions phenomenon: the "endowment effect." And all man's decisions are suddenly regarded by him as better than would have been the case just before he made them.

Man's excess of self-regard typically makes him strongly prefer people like himself. Psychology professors have had much fun demonstrating this effect in "lost-wallet" experiments. Their experiments all show that the finder of a lost wallet containing identity clues will be most likely to return the wallet when the owner most closely resembles the finder. Given this quality in psychosocial nature, cliquish groups of similar persons will always be a very influential part of human culture, even after we wisely try to dampen the worst effects.

Some of the worst consequences in modern life come when dysfunctional groups of cliquish persons, dominated by Excessive Self-Regard Tendency, select as new members of their organizations persons who are very much like themselves. Thus if the English department at an elite university becomes mentally dysfunctional or the sales department of a brokerage firm slips into routine fraud, the problem will have a natural tendency to get worse and to be quite resistant to change for the better. So also with a police department or prison-guard unit or political group gone sour and countless other places mired in evil and folly, such as the worst of our big-city teachers' unions that harm our children by preventing discharge of ineffective teachers.

Therefore, some of the most useful members of our civilization are those who are willing to "clean house" when they find a mess under their ambit of control.

Well, naturally, all forms of excess of self-regard cause much error. How could it be otherwise?

Let us consider some foolish gambling decisions. In lotteries, the play is much lower when numbers are distributed randomly than it is when the player picks his own number. This is quite irrational. The odds are almost exactly the same and much against the player. Because state lotteries take advantage of man's irrational love of self-picked numbers, modern man buys more lottery tickets than he otherwise would have, with each purchase foolish.

Intensify man's love of his own conclusions by adding the possessory wallop from the "endowment effect," and you will find that a man who has already bought a pork-belly future on a commodity exchange now foolishly believes, even more strongly than before, in the merits of his speculative bet.

And foolish sports betting, by people who love sports and think they know a lot about relative merits of teams, is a lot more addictive than race track betting – partly because of man's automatic overappraisal of his own complicated conclusions.

Also extremely counterproductive is man's tendency to bet, time after time, in games of skill, like golf or poker, against people who are obviously much better players. Excessive Self-Regard Tendency diminishes the foolish bettor's accuracy in appraising his relative degree of talent.

More counterproductive yet are man's appraisals, typically excessive, of the quality of the future service he is to provide to his business. His overappraisal of these prospective contributions will frequently cause disaster.

Excesses of self-regard often cause bad hiring decisions because employers grossly overappraise the worth of their own conclusions that rely on impressions in face-to-face contact. The correct antidote to this sort of folly is to underweigh face-to-face impressions and overweigh the applicant's past record.

I once chose exactly this course of action while I served as chairman of an academic search committee. I convinced fellow committee members to stop all further interviews and simply appoint a person whose achievement record was much better than that of any other applicant. And when it was suggested to me that I wasn't giving "academic due process," I replied that I was the one being true to academic values because I was using academic research showing poor predictive value of impressions from face-to-face interviews.

Because man is likely to be overinfluenced by face-to-face impressions that by definition involve his active participation, a job candidate who is a marvelous "presenter" often causes great danger under modern executive-search practice. In my opinion, Hewlett-Packard faced just such a danger when it interviewed the articulate, dynamic Carly Fiorina in its search for a new CEO. And I believe that Hewlett-Packard made a bad decision when it chose Ms. Fiorina, and that this bad decision would not have been made if Hewlett-Packard had taken the methodological precautions it would have taken if it knew more psychology.

There is a famous passage somewhere in Tolstoy that illuminates the power of Excessive Self-Regard Tendency. According to Tolstoy, the worst criminals don't appraise themselves as all that bad. They come to believe either (1) that they didn't commit their crimes or (2) that, considering the pressures and disadvantages of their lives, it is understandable and forgivable that they behaved as they did and became what they became.

The second half of the "Tolstoy effect," where the man makes excuses for his fixable poor performance, instead of providing the fix, is enormously important. Because a majority of mankind will try to get along by making way too many unreasonable excuses for fixable poor performance, it is very important to have personal and institutional **antidotes** limiting the ravages of such folly. On the personal level a man should try to face the two simple facts:

1) fixable but unfixed bad performance is bad character and tends to create more of itself, causing more damage to the excuse giver with each tolerated instance, and
2) in demanding places, like athletic teams and General Electric, you are almost sure to be discarded in due course if you keep giving excuses instead of behaving as you should.

The main institutional **antidotes** to this part of the "Tolstoy effect" are:

1) a fair, meritocratic, demanding culture plus personnel handling methods that build up morale, and
2) severance of the worst offenders.

Of course, when you can't sever – as in the case of your own child – you must try to fix the child as best you can. I once heard of child-teaching method so effective that the child remembered the learning experience over fifty years later. The child later became Dean of the USC School of Music and then related to me what father said when he saw his child taking candy from the stock of his employer with the excuse that he intended to replace it later. The father said, "Son, it would be better for you to simply take all you want and call yourself a thief every time you do it."

The best **antidote** to folly from an excess of self-regard is to force yourself to be more objective when you are thinking about yourself, your family and friends, your property, and the value of your past and future activity. This isn't easy to do well won't work perfectly, but it will work much better than simply letting psychological nature take its normal course.

While an excess of self-regard is often counterproductive in its effects on cognition, it can cause some weird successes from overconfidence that happens to

cause success. This factor accounts for the adage: "Never underestimate the man who overestimates himself."

Of course, some high self-appraisals are correct and serve better than false modesty. Moreover, self-regard in the form of a justified pride in a job well done, or a life well lived, is a large constructive force. Without such justified pride, many more airplanes would crash. "Pride" is another word generally left out of psychology textbooks, and this omission is not a good idea. It is also not a good idea to construe the bible's parable about the Pharisee and the Publican as condemning all pride.

Of all forms of useful pride, perhaps the most desirable is a justified pride in being trustworthy. Moreover, the trustworthy man, even after allowing for the inconveniences of his chosen course, ordinarily has a life that averages out better than he would have if he provided less reliability.

13. Overoptimism Tendency

About three centuries before the birth of Christ, Demosthenes, the most famous Greek orator, said, "What a man wishes, that also will he believe."

Demosthenes, parsed out, was thus saying that man displays not only Simple, Pain-Avoiding Psychological Denial but also an excess of optimism even when he is already doing well.

The Greek orator was clearly right about an excess of optimism being the normal human condition, even when pain or the threat of pain is absent. Witness happy people buying lottery tickets or believing that credit-furnishing, delivery-making grocery stores were going to displace a great many superefficient cash-and-carry supermarkets.

One standard **antidote** to foolish optimism is trained, habitual use of the simple probability math of Fermat and Pascal, taught in my youth to high school sophomores. The mental rules of thumb that evolution gives you to deal with risk are not adequate. They resemble the dysfunctional golf grip you would have if you relied on a grip driven by evolution instead of golf lessons.

14. Deprival Superreaction Tendency

The quantity of man's pleasure from a ten dollar gain does not exactly match the quantity of his displeasure from a ten-dollar loss. That is, the loss seems to hurt much more than the gain seems to help. Moreover, if a man almost gets something he greatly wants and has it jerked away from him at the last moment, he will react much as if he had long owned the reward and had it jerked away. I include the natural human reactions to both kind of loss experience – the loss of the possessed reward and the loss of the almost-possessed reward – under one description, Deprival Superreaction Tendency.

In displaying Deprival Superreaction Tendency, man frequently incurs disadvantage by misframing his problems. He will often compare what is near instead of what really matters. For instance, a man with $10 million in his brokerage account will often be extremely irritated by the accidental loss of $100 out of the $300 in his wallet.

The Mungers once owned a tame and good-natured dog that displayed the canine version of Deprival Superreaction Tendency. There was only one way to get bitten by this dog. And that was to try and take some food away from him after he already had it in his mouth. If you did that, this friendly dog would automatically bite. He couldn't help it. Nothing could be more stupid than for the dog to bite his master. But the dog couldn't help being foolish. He had an automatic Deprival Superreaction Tendency in his nature.

Humans are much the same as this Munger dog. A man ordinarily reacts with irrational intensity to even a small loss, or threatened loss, of property, love, friendship, dominated territory, opportunity: status, or any other valued thing. As a natural result, bureaucratic infighting over the threatened loss of dominated territory often causes immense damage to an institution as a whole. This factor among others, accounts for much of the wisdom of Jack Welch's long fight against bureaucratic ills at General Electric. Few business leaders have ever conducted wiser campaigns.

Deprival Superreaction Tendency often protects ideological or religious views by triggering and hatred directed toward vocal nonbelievers. This happens, in part, because the ideas of the nonbelievers, if they spread, will diminish the influence of views that are now supported by a comfortable environment including a strong relief-maintenance system. University liberal arts departments, law schools, and business organizations all display plenty of such ideology-based groupthink that rejects almost all conflicting inputs. When the vocal critic is a former believer, hostility is often boosted both by:

1) a concept of betrayal that triggers additional Deprival Superreaction Tendency because a colleague is lost, and
2) fears that conflicting views will have extra persuasive power when they come from a former colleague.

The foregoing considerations help account for the old idea of heresy, which for centuries justified much killing of heretics, frequently after torture and frequently accomplished by burning the victim alive.

It is almost everywhere the case that extremes of ideology are maintained with great intensity and with great antipathy to non-believers, causing extremes of cognitive dysfunction. This happens, I believe, because two psychological tendencies are usually acting concurrently toward this same sad result: Inconsistency-Avoidance Tendency, plus Deprival Superreaction Tendency.

One **antidote** to intense, deliberate maintenance of groupthink is an extreme culture of courtesy, kept in place despite ideological differences, like the behavior of the justices now serving on the U.S. Supreme Court. Another antidote is to deliberately bring in able and articulate disbelievers of incumbent groupthink. Successful corrective measures to evil examples of groupthink maintenance have included actions like that of Derek Bok when, as president of Harvard, he started disapproving tenure appointments proposed by ideologues at Harvard Law School.

Even a one-degree loss from a 180-degree view will sometime create enough Deprival Superreaction Tendency to turn a neighbor into an enemy, as I once observed when I bought a house from one of two neighbors locked into hatred by a tiny tree newly installed by one of them.

As the case of these two neighbors illustrated, the clamor of almost any group of neighbors displaying irrational, extreme deprival superreaction over some trifle in a zoning hearing is not a pretty thing to watch. Such bad behavior drives some people from the zoning field. I once bought some golf clubs from an artisan who was formerly a lawyer. When I asked him what kind of law he had practiced, I expected to hear him say, "divorce law" But his answer was, "zoning law."

Deprival Superreaction Tendency has ghastly effects in labor relations. Most of the deaths in the labor strife that occurred before World War I came when employers tried to reduce wages. Nowadays, we see fewer deaths and more occasions when whole companies disappear, as competition requires either takeaways from labor – which it will not consent to – or death of the business. Deprival Superreaction Tendency causes much of this labor resistance, often in cases where it would be in labor's interest to make a different decision.

In contexts other than labor relations, takeaways are also difficult to get. Many tragedies, therefore, occur that would have been avoided had there been more rationality and less subconscious heed of the imperative from Deprival Superreaction Tendency.

Deprival Superreaction Tendency and Inconsistency-Avoidance Tendency often join to cause one form of business failure. In this form of ruin, a man gradually uses up all his good assets in a fruitless attempt to rescue a big venture going bad. One of the best **antidotes** to this folly is good poker skill learned young. The teaching value of poker demonstrates that not all effective teaching occurs on a standard academic path.

Deprival Superreaction Tendency is also a huge contributor to ruin from compulsion to gamble. First, it causes the gambler to have a passion to get even once he has suffered loss, and the passion grows with the loss. Second, the most addictive forms of gambling provide a lot of near misses and each one triggers Deprival Superreaction Tendency. Some slot machine creators are vicious in exploiting this weakness of man. Electronic machines enable these creators to produce a lot of meaningless bar-bar-lemon results that greatly increase play by fools who think they have very nearly won large rewards.

Deprival Superreaction Tendency often does much damage to man in open-outcry auctions. The "social proof" that we will next consider tends to convince man that the last price from another bidder was reasonable, and then Deprival Superreaction Tendency prompts him strongly to top the last bid. The best **antidote** to being thus triggered into paying foolish prices at open-outcry auctions is the simple Buffett practice: Don't go to such auctions.

I myself, the would-be instructor here, many decades ago made a big mistake caused in part by subconscious operation of my Deprival Superreaction Tendency. A friendly broker called and offered me 300 shares of ridiculously underpriced, very thinly traded Belridge Oil at $115 per share, which I purchased using cash I had on hand. The next day, he offered me 1,500 more shares at the same price, which I declined to buy, partly because I could only have made the purchase had I sold something or borrowed the required $173,000. This was a very irrational decision. I was a well-to-do man with no debt; there was no risk of loss; and similar no risk opportunities were not likely to come along. Within two years, Belridge Oil sold out to Shell at a price of about $3,700 per share, which made me about $5.4 million poorer than I would have been had I then been psychologically acute. As this tale demonstrates, psychological ignorance can be very expensive.

Some people may question my defining Deprival Superreaction Tendency to include reaction to profit barely missed, as in the well-documented responses of slot machine players. However, I believe that I haven't defined the tendency as broadly as I should. My reason for suggesting an even broader definition is that many Berkshire Hathaway shareholders I know never sell or give away a single share after immense gains in market value have occurred. Some of this reaction is caused by rational calculation, and some is, no doubt, attributable to some combination of (1) reward superresponse, (2) "status quo bias" from Inconsistency-Avoidance Tendency, and (3) "the endowment effect" from Excessive Self-Regard Tendency. But I believe the single strongest irrational explanation is a form of Deprival Superreaction Tendency. Many of these shareholders simply can't stand the idea of having their Berkshire Hathaway holdings smaller. Partly they dislike facing what they consider an impairment of identity, but mostly they fear missing out on future gains from stock sold or given away.

15. Social-Proof Tendency

The otherwise complex behavior of man is much simplified when he automatically thinks and does what he observes to be thought and done around him. And such followership often works fine. For instance, what sim-

pler way could there be to find out how to walk to a big football game in a strange city than by following the flow of the crowd. For some such reason, man's evolution left him with Social-Proof Tendency, an automatic tendency to think and act as he sees others around him thinking and acting.

Psychology professors love Social-Proof Tendency because in their experiments it causes ridiculous results. For instance, if a professor arranges for some stranger to enter an elevator wherein ten "compliance practitioners" are all silently standing so that they face the rear of the elevator, the stranger will often turn around and do the same. The psychology professors can also use Social-Proof Tendency to cause people to make large and ridiculous measurement errors.

And, of course, teenagers' parents usually learn more than they would like about teenagers' cognitive errors from Social-Proof Tendency. This phenomenon was recently involved in a breakthrough by Judith Rich Harris who demonstrated that superrespect by young people for their peers, rather than for parents or other adults, is ordained to some considerable extent by the genes of the young people. This makes it wise for parents to rely more on manipulating the quality of the peers than on exhortations to their own offspring. A person like Ms. Harris, who can provide an insight of this quality and utility, backed by new reasons, has not lived in vain.

And in the highest reaches of business, it is not all uncommon to find leaders who display followership akin to that of teenagers. If one oil company foolishly buys a mine, other oil companies often quickly join in buying mines. So also if the purchased company makes fertilizer. Both of these oil company buying fads actually bloomed, with bad results.

Of course, it is difficult to identify and correctly weigh all the possible ways to deploy the cash flow of an oil company. So oil company executives, like everyone else, have made many bad decisions that were quickly triggered by discomfort from doubt. Going along with social proof provided by the action of other oil companies ends this discomfort in a natural way.

When will Social-Proof Tendency be most easily triggered? Here the answer is clear from many experiments: Triggering most readily occurs in the presence of puzzlement or stress, and particularly when both exist.

Because stress intensifies Social-Proof Tendency, disreputable sales organizations, engaged, for instance, in such action as selling swampland to schoolteachers, manipulate targets into situations combining isolation and stress. The isolation strengthens the social proof provided by both the knaves and the people who buy first, and the stress, often increased by fatigue, augments the targets' susceptibility to the social proof. And, of course, the techniques of our worst "religious" cults imitate those of the knavish salesmen. One cult even used rattlesnakes to heighten the stress felt by conversion targets.

Because both bad and good behavior are made contagious by Social-Proof Tendency, it is highly important that human societies stop any bad behavior before it spreads and foster and display all good behavior.

My father once told me that just after commencing law practice in Omaha, he went with a large group from Nebraska to South Dakota to hunt pheasants. A South Dakota hunting license was, say, $2 for South Dakota residents and $5 for nonresidents. All the Nebraska residents, one by one, signed up for South Dakota licenses with phony South Dakota addresses until it was my father's turn. Then, according to him, he barely prevented himself from doing what the others were doing, which was some sort of criminal offense.

Not everyone so resists the social contagion of bad behavior. And, therefore, we often get "Serpico Syndrome," named to commemorate the state of a near-totally corrupt New York police division joined by Frank Serpico. He was then nearly murdered by gunfire because of his resistance to going along with the corruption in the division. Such corruption was being driven by social proof plus incentives, the combination that creates Serpico Syndrome. The Serpico story should be taught more than it now is because the didactic power of its horror is aimed at a very important evil, driven substantially by a very important force: social proof.

In social proof, it is not only action by others that misleads but also their inaction. In the presence of doubt, inaction by others becomes social proof that inaction is the right course. Thus, the inaction of a great many bystanders led to the death of Kitty Genovese in a famous incident much discussed in introductory psychology courses.

In the ambit of social proof, the outside rectors on a corporate board usually display the near ultimate form of inaction. They fail to object to anything much short of an axe murder until some public embarrassment of the board finally causes their intervention. A typical board-of-directors' culture was once well described by my friend, Joe Rosenfield, as he said, "They asked me if I wanted become a director of Northwest Bell, and it was the last thing they ever asked me."

In advertising and sales promotion, Social-Proof Tendency is about as strong a factor as one could imagine. "Monkey-see, monkey-do" is the old phrase that reminds one of how strongly John will often wish to do something, or have something, just because Joe does or has it. One interesting consequence is that an advertiser will pay a lot to have its soup can, instead of someone else's, in a movie scene involving soup consumption only in a peripheral way.

Social-Proof Tendency often interacts in a perverse way with Envy/Jealousy and Deprival Superreaction Tendency. One such interaction amused my family for years as people recalled the time when my cousin Russ and I, at ages three and four, fought and howled over a

single surplus shingle while surrounded by a virtual sea of surplus shingles.

But the adult versions of this occasion, boosted by psychological tendencies preserving ideologies, are not funny – and can bring down whole civilizations. The Middle East now presents just such a threat. By now the resources spent by Jews, Arabs and all others over a small amount of disputed land if divided arbitrarily among land claimants, would have made everyone better off, even before taking into account any benefit from reduced threat of war, possibly nuclear.

Outside domestic relations it is rare now to try to resolve disputes by techniques including discussion of impacts from psychological tendencies. Considering the implications of childishness that would be raised by such inclusion, and the defects of psychology as now taught, this result may be sound. But, given the nuclear stakes now involved and the many failures in important negotiations lasting decades, I often wonder if some day, in some way, more use of psychological insight will eventually improve outcomes. If so, correct teaching of psychology matters a lot. And, if old psychology professors are even less likely than old physics professors to learn new ways, which seems nearly certain, then we may, as Max Planck predicted, need a new generation of psychology professors who have grown up to think in a different way.

If only one lesson is to be chosen from a package of lessons involving Social-Proof Tendency, and used in self improvement, my favorite would be: Learn how to ignore the examples from others when they are wrong, because few skills are more worth having.

16. Contrast-Misreaction Tendency

Because the nervous system of man does not naturally measure in absolute scientific units, it must instead rely on something simpler. The eyes have a solution that limits their programming needs: the contrast in what is seen is registered. And as in sight, so does it go, largely, in the other senses. Moreover, as perception goes, so goes cognition. The result is man's Contrast-Misreaction Tendency. Few psychological tendencies do more damage to correct thinking. Small-scale damages involve instances such as man's buying an overpriced $1,000 leather dashboard merely because the price is so low compared to his concurrent purchase of a $65,000 car. Large-scale damages often ruin lives, as when a wonderful woman having terrible parents marries a man who would be judged satisfactory only in comparison to her parents. Or as when a man takes wife number two who would be appraised as all right only in comparison to wife number one.

A particularly reprehensible form of sales practice occurs in the offices of some real estate brokers. A buyer from out of the city, perhaps needing to shift his family there, visits the office with little time available. The salesman deliberately shows the customer three awful houses at ridiculously high prices. Then he shows him a merely bad house at a price only moderately too high. And, boom, the broker often makes an easy sale.

Contrast-Misreaction Tendency is routinely used to cause disadvantage for customers buying merchandise and services. To make an ordinary price seem low, the vendor will very frequently create a highly artificial price that is much higher than the price always sought, then advertise his standard price as a big reduction from his phony price. Even when people know that this sort of customer manipulation is being attempted, it will often work to trigger buying. This phenomenon accounts in part for much advertising in newspapers. It also demonstrates that being aware of psychological ploys is not a perfect defense. When a man's steps are consecutively taken toward disaster, with each step being very small, the brain's Contrast-Misreaction Tendency will often let the man go too far toward disaster to be able to avoid it. This happens because each step presents small a contrast from his present position.

A bridge-playing pal of mine once told me that a frog tossed into very hot water would jump out, but that the same frog would end up dying if placed in room-temperature water that was later treated at a very slow rate. My few shreds of physiological knowledge make me doubt this account. But no matter, because many businesses die in just the manner claimed by my friend for the frog. Cognition, misled by tiny changes involving low contrast, will often miss a trend that is destiny.

One of Ben Franklin's best-remembered and most useful aphorisms is "A small leak will sink great ship." The utility of the aphorism is large precisely because the brain so often misses the functional equivalent of a small leak in a great ship.

17. Stress-Influence Tendency

Everyone recognizes that sudden stress, for instance from a threat, will cause a rush of adrenaline in the human body, prompting faster and more extreme reaction. And everyone who has taken Psych 101 knows that stress makes Social-Proof Tendency more powerful.

In a phenomenon less well recognized, but still widely known, light stress can slightly improve performance – say, in examinations – whereas heavy stress causes dysfunction.

But few people know more about really heavy stress than that it can cause depression. For instance, most people know that an "acute stress depression" makes thinking dysfunctional because it causes an extreme of pessimism, often extended in length and usually accompanied by activity stopping fatigue. Fortunately, as most people also know, such a depression is one of mankind's more reversible ailments. Even before modern drugs were available, many people afflicted by depression, such as Winston Churchill and Samuel Johnson, gained great achievement in life.

Most people know very little about nondepressive

mental breakdowns influenced by heavy stress. But there is at least one exception, involving the work of Pavlov when he was in his seventies and eighties. Pavlov had won a Nobel Prize early in life by using dogs to work out the physiology of digestion. Then he became world-famous by working out mere-association responses in dogs, initially salivating dogs -- so much so that changes in behavior triggered by mere-association, like those caused by much modern advertisement, are today often said to come from "Pavlovian" conditioning.

What happened to cause Pavlov's last work was especially interesting. During the great Leningrad Flood of the 1920s, Pavlov had many dogs in cages. Their habits had been transformed, by a combination of his "Pavlovian conditioning" plus standard reward responses, into distinct and different patterns. As the waters of the flood came up and receded, many dogs reached a point where they had almost no airspace between their noses and the tops of their cages. This subjected them to maximum stress. Immediately thereafter, Pavlov noticed that many of the dogs were no longer behaving as they had. For example, the dog that formerly had liked his trainer now disliked him. This result reminds one of modern cognition-reversals in which a person's love of his parents suddenly becomes hate, as new love has been shifted suddenly to a cult. The unanticipated, extreme changes in Pavlov's dogs would have driven any good experimental scientist into a near-frenzy of curiosity. That was indeed Pavlov's reaction. But not many scientists would have done what Pavlov next did.

And that was to spend the rest of his long life giving stress-induced nervous breakdowns to dogs, after which he would try to reverse the breakdowns, all the while keeping careful experimental records. He found

1) that he could classify dogs so as to predict how easily a particular dog would breakdown;
2) that the dogs hardest to break down were also the hardest to return to their pre-breakdown state;
3) that any dog could be broken down; and
4) that he couldn't reverse a breakdown except by reimposing stress.

Now, practically everyone is revolted by such experimental treatment of man's friend, the dog. Moreover, Pavlov was Russian and did his last work under the Communists. And maybe those facts account for the present extreme, widespread ignorance of Pavlov's last work. The two Freudian psychiatrists with whom I tried many years ago to discuss this work had never heard of it. And the dean of a major medical school actually asked me, several years ago, if any of Pavlov's experiments were "repeatable" in experiments of other researchers. Obviously, Pavlov is now a sort of forgotten hero in medical science.

I first found a description of Pavlov's last work in a popular paperback, written by some Rockefeller-financed psychiatrist, when I was trying to figure out how cults worked their horrible mischief and what should the law say about what parents could do to "deprogram" children who had become brainwashed zombies. Naturally, mainstream law objected to the zombies being physically captured by their parents and subjected to stress that would help to deprogram the effects of the stress they had endured in cult conversions.

I never wanted to get into the legal controversy that existed about this subject. But I did conclude that the controversy couldn't be handled with maximized rationality without considering whether as Pavlov's last work suggests, the heavy-handed imposition of stress might be the only reversal method that would work to remedy one of the worst evils imaginable: a stolen mind. I have included this discussion of Pavlov partly out of general antagonism toward taboos, partly to make my talk reasonably complete as it considers stress and partly because I hope some listener may continue my inquiry with more success.

18. Availability-Misweighing Tendency

This mental tendency echoes the words of the song: "When I'm not near the girl I love, I love the girl I'm near." Man's imperfect, limited-capacity brain easily drifts into working with what's easily available to it. And the brain can't use what it can't remember or what it is blocked from recognizing because it is heavily influenced by one or more psychological tendencies bearing strongly on it, as the fellow is influenced by the nearby girl in the song. And so the mind overweighs what is easily available and thus displays Availability-Misweighing Tendency.

The main **antidotes** to miscues from Availability-Misweighing Tendency often involve procedures, including use of checklists, which are almost always helpful.

Another **antidote** is to behave somewhat like Darwin did when he emphasized disconfirming evidence. What should be done is to especially emphasize factors that don't produce reams of easily available numbers, instead of drifting mostly or entirely into considering factors that do produce such numbers. Still another antidote is to find and hire some skeptical, articulate people with far-reaching minds to act as advocates for notions that are opposite to the incumbent notions.

One consequence of this tendency is that extra vivid evidence, being so memorable and thus more available in cognition, should often consciously be underweighed while less vivid evidence should be overweighed.

Still, the special strength of extra-vivid images in influencing the mind can be constructively used

1) in persuading someone else to reach a correct conclusion or
2) as a device for improving one's own memory by attaching vivid images, one after the other, to many items one doesn't want to forget.

Indeed, such use of vivid images as memory boosters is

what enabled the great orators of classical Greece and Rome to give such long, organized speeches without using notes.

The great algorithm to remember in dealing with this tendency is simple: An idea or a fact is not worth more merely because it is easily available to you.

19. Use-It-or-Lose-It Tendency

All skills attenuate with disuse. I was a whiz at calculus until age twenty, after which the skill was soon obliterated by total nonuse. The right antidote to such a loss is to make use of the functional equivalent of the aircraft simulator employed in pilot training. This allows a pilot to continuously practice all of the rarely used skills that he can't afford to lose.

Throughout his life, a wise man engages in practice of all his useful, rarely used skills, many of them outside his discipline, as a sort of duty to his better self. If he reduces the number of skills he practices and, therefore, the number of skills he retains, he will naturally drift into error from man with a hammer tendency. His learning capacity will also shrink as he creates gaps in the latticework of theory he needs as a framework for understanding new experience. It is also essential for a thinking man to assemble his skills into a checklist that he routinely uses. Any other mode of operation will cause him to miss much that is important.

Skills of a very high order can be maintained only with daily practice. The pianist Paderewski once said that if he failed to practice for a single day, he could notice his performance deterioration and that, after a week's gap in practice, the audience could notice it as well.

The hard rule of Use-It-or-Lose-It Tendency tempers its harshness for the diligent. If a skill is raised to fluency, instead of merely being crammed in briefly to enable one to pass some test, then the skill (1) will be lost more slowly and (2) will come back faster when refreshed with new learning. These are not minor advantages, and a wise man engaged in learning some important skill will not stop until he is really fluent in it.

20. Drug-Misinfluence Tendency

This tendency's destructive power is so widely known to be intense, with frequent tragic consequences for cognition and the outcome of life, that it needs no discussion here to supplement that previously given under "Simple, Pain-Avoiding Psychological Denial."

21. Senescence-Misinfluence Tendency

With advanced age, there comes a natural cognitive decay, differing among individuals in the earliness of its arrival and the speed of its progression. Practically no one is good at learning complex new skills when very old. But some people remain pretty good in maintaining intensely practiced old skills until late in life, as one can notice in many a bridge tournament.

Old people like me get pretty skilled, without working at it, at disguising age-related deterioration because social convention, like clothing, hides much decline.

Continuous thinking and learning, done with joy, can somewhat help delay what is inevitable.

22. Authority-Misinfluence Tendency

Living in dominance hierarchies as he does, like all his ancestors before him, man was born mostly to follow leaders, with only a few people doing the leading. And so, human society is formally organized into dominance hierarchies, with their culture augmenting the natural follow-the-leader tendency of man.

But automatic as most human reactions are, with the tendency to follow leaders being no exception, man is often destined to suffer greatly when the leader is wrong or when his leader's ideas don't get through properly in the bustle of life and are misunderstood. And so, we find much miscognition from man's Authority-Misinfluence Tendency.

Some of the misinfluences are amusing, as in a case described by Cialdini. A physician left a written order for a nurse treating an earache, as follows: "Two drops, twice a day, r. ear." The nurse then directed the patient to turn over and put the eardrops in his anus.

Other versions of confused instructions from authority figures are tragic. In World War II, a new pilot for a general, who sat beside him in the copilot's seat, was so anxious to please his boss that he misinterpreted some minor shift in the general's position as a direction to do some foolish thing. The pilot crashed the plane and became a paraplegic.

Well, naturally, cases like this one get the attention of careful thinkers like Boss Buffett, who always acts like an overquiet mouse around his pilots.

Such cases are also given attention in the simulator training of copilots who have to learn to ignore certain really foolish orders from boss pilots because boss pilots will sometimes err disastrously. Even after going through such a training regime, however, copilots in simulator exercises will too often allow the simulated plane to crash because of some extreme and perfectly obvious simulated error of the chief pilot.

After Corporal Hitler had risen to dominate Germany, leading a bunch of believing Lutherans and Catholics into orgies of genocide and other mass destruction, one clever psychology professor, Stanley Milgram, decided to do an experiment to determine exactly how far authority figures could lead ordinary people into gross misbehavior. In this experiment, a man posing as an authority figure, namely a professor governing a respectable experiment, was able to trick a great many ordinary people into giving what they had every reason to believe were massive electric shocks that inflicted heavy torture on innocent fellow citizens. This experiment did demonstrate a terrible result contributed to by Authority-Misinfluence Tendency, but it also demon-

strated extreme ignorance in the psychology professoriate right after World War II.

Almost any intelligent person with my checklist of psychological tendencies in his hand would, by simply going down the checklist, have seen that Milgram's experiment involved about six powerful psychological tendencies acting in confluence to bring about his extreme experimental result. For instance, the person pushing Milgram's shock lever was given much social proof from presence of inactive bystanders whose silence communicated that his behavior was okay. Yet it took over a thousand psychological papers, published before I got to Milgram, for the professoriate to get his experiment only about ninety percent as well understood as it would have immediately been by any intelligent person who used (1) any sensible organization of psychology along the lines of this talk, plus (2) a checklist procedure. This outcome displaying the dysfunctional thinking of long-dead professors deserves a better explanation. I will later deal with the subject in a very hesitant fashion.

We can be pleased that the psychology professoriate of a former era wasn't quite as dysfunctional as the angler in my next-to-last illustration of Authority-Misinfluence Tendency.

When I once fished in the Rio Colorado in Costa Rica, my guide, in a state of shock, told me a story about an angler who'd earlier come to the river without ever having fished for tarpon. A fishing guide like the one I had runs the boat and gives fishing advice, establishing himself in this context as the ultimate authority figure. In the case of this guide, his native language was Spanish, while the angler's native language was English. The angler got a big tarpon on and began submitting to many directions from this authority figure called guide: tip up, tip down, reel in, etc. Finally, when it was necessary to put more pressure on the fish by causing more bending of the angler's rod, the guide said in English: "Give him the rod, give him the rod." Well, the angler threw his expensive rod at the fish, and when last seen, it was going down the Rio Colorado toward the ocean. This example shows how powerful is the tendency to go along with an authority figure and how it can turn ones brain into mush.

My final example comes from business. A psychology Ph.D. once became a CEO of a major company and went wild, creating an expensive headquarters, with a great wine cellar, at an isolated site. At some point, his underlings remonstrated that money was running short. "Take the money out of the depreciation reserves," said the CEO. Not too easy because a depreciation reserve is a liability account.

So strong is undue respect for authority that this CEO, and many even worse examples, have actually been allowed to remain in control of important business institutions for long periods after it was clear they should be removed. The obvious implication: be careful whom you appoint to power because a dominant authority figure will often be hard to remove, aided as he will be by Authority-Misinfluence Tendency.

23. Twaddle Tendency

Man, as a social animal who has the gift of language, is born to prattle and to pour out twaddle that does much damage when serious work is being attempted. Some people produce copious amounts of twaddle and others very little.

A trouble from the honeybee version of twaddle once demonstrated in an interesting experiment. A honeybee normally goes out and finds nectar and then comes back and does a dance that communicates to the other bees where the nectar is. The other bees then go out and get it. Well some scientist – clever, like B. F. Skinner – decided to see how well a honeybee would do with a handicap. He put the nectar straight up. Way up. Well, in a natural setting, there is no nectar a long way straight up, and the poor honeybee doesn't have a genetic program that is adequate to handle what she now as to communicate. You might guess that this honeybee would come back to the hive and slink into a corner, but she doesn't. She comes into the hive and does an incoherent dance. Well, all my life I've been dealing with the human equivalent of that honeybee. And it's a very important part of wise administration to keep prattling people, pouring out twaddle, far away from the serious work.

A rightly famous Caltech engineering professor, exhibiting more insight than tact, once expressed his version of this idea as follows: "The principal job of an academic administration is to keep the people who don't matter from interfering with the work of the people that do." I include this quotation partly because I long suffered from backlash caused by my version of this professor's conversational manner. After much effort, I was able to improve only slightly, so one of my reasons for supplying the quotation is my hope that, at least in comparison, I will appear tactful.

24. Reason-Respecting Tendency

There is in man, particularly one in an advanced culture, a natural love of accurate cognition and a joy in its exercise. This accounts for the widespread popularity of crossword puzzles, other puzzles, and bridge and chess columns, as well as all games requiring mental skill.

This tendency has an obvious implication. It makes man especially prone to learn well when a would-be teacher gives correct reasons for what is taught, instead of simply laying out the desired belief *ex cathedra* with no reasons given. Few practices, therefore, are wiser than not only thinking through reasons before giving orders but also communicating these reasons to the recipient of the order.

No one knew this better than Carl Braun, who designed oil refineries with spectacular skill and integrity.

He had a very simple rule, one of many in his large, Teutonic company: You had to tell Who was to do What, Where, When, and Why. And if you wrote a communication leaving out your explanation of why the addressee was to do what was ordered, Braun was likely to fire you because Braun well knew that ideas got through best when reasons for the ideas were meticulously laid out.

In general, learning is most easily assimilated and used when, life long, people consistently hang their experience, actual and vicarious, on a latticework of theory answering the question: Why? Indeed, the question "Why?" is a sort of Rosetta stone opening up the major potentiality of mental life.

Unfortunately, Reason-Respecting Tendency is so strong that even a person's giving of meaningless or incorrect reasons will increase compliance with his orders and requests. This has been demonstrated in psychology experiments wherein "compliance practitioners" successfully jump to the head of the lines in front of copying machines by explaining their reason: "I have to make some copies." This sort of unfortunate byproduct of Reason-Respecting Tendency is a conditioned reflex, based on a widespread appreciation of the importance of reasons. And, naturally, the practice of laying out various claptrap reasons is much used by commercial and cult "compliance practitioners" to help them get what they don't deserve.

25. Lollapalooza Tendency – The Tendency to Get Extreme Consequences from Confluences of Psychological Tendencies Acting in Favor of a Particular Outcome

This tendency was not in any of the psychology texts I once examined, at least in any coherent fashion, yet it dominates life. It accounts for the extreme result in the Milgram experiment and the extreme success of some cults that have stumbled through practice evolution into bringing pressure from many psychological tendencies to bear at the same time on conversion targets. The targets vary in susceptibility, like the dogs Pavlov worked with in his old age, but some of the minds that are targeted simply snap into zombiedom under cult pressure. Indeed, that is one cult's name for the conversion phenomenon: snapping.

What are we to make of the extreme ignorance of the psychology textbook writers of yesteryear? How could anyone who had taken a freshman course in physics or chemistry not be driven to consider, above all, how psychological tendencies combine and with what effects? Why would anyone think his study of psychology was adequate without his having endured the complexity involved in dealing with intertwined psychological tendencies? What could be more ironic than professors using oversimplified notions while studying bad cognitive effects grounded in the mind's tendency to use oversimplified algorithms?

I will make a few tentative suggestions. Maybe many of the long-dead professors wanted to create a whole science from one narrow type of repeatable psychology experiment that was conductible in a university setting and that aimed at one psychological tendency at a time. If so, these early psychology professors made a massive error in so restricting their approach to their subject. It would be like physics ignoring astrophysics because it couldn't happen in a physics lab, plus all compound effects. What psychological tendencies could account for early psychology professors adopting an over-restricted approach to their own subject matter? One candidate would be Availability-Misweighing Tendency grounded in a preference for easy-to-control data. And then the restrictions would eventually create an extreme case of man with a hammer tendency. Another candidate might be Envy/jealousy Tendency through which early psychology professors displayed some weird form of envy of a physics that was misunderstood. And this possibility tends to demonstrate that leaving envy/jealousy out of academic psychology was never a good idea. I now quit claim of all these historical mysteries to my betters.

Well, that ends my brief description of psychological tendencies.

QUESTIONS AND ANSWERS

Now, as promised, I will ask and answer a few general questions.

Q. Isn't this list of psychological tendencies tautological to some extent compared to the system of Euclid? That is, aren't there overlaps in the tendencies? And couldn't the system be laid out just as plausibly in a somewhat different way?

The answers are yes, yes, and yes, but this matters only moderately. Further refinement of these tendencies, while desirable, has a limited practical potential because a significant amount of messiness is unfixable in a soft science like psychology.

Q. Can you supply a real world model, instead of a Milgram-type controlled psychology experiment, that uses your system to illustrate multiple psychological tendencies interacting in a plausibly diagnosable way?

The answer is yes. One of my favorite cases involves the McDonnell Douglas airliner evacuation test. Before a new airliner can be sold, the government requires that it pass an evacuation test, during which a full load of passengers must get out in some short period of time. The government directs that the test be realistic. So you can't pass by evacuating only twenty-year-old athletes. So McDonnell Douglas scheduled such a test in a darkened hangar using a lot of old people as evacuees. The passenger cabin was, say, twenty feet above the concrete floor of the hangar and was to be evacuated through

moderately flimsy rubber chutes. The first test was made in the morning. There were about twenty very serious injuries, and the evacuation took so long it flunked the time test. So what did McDonnell Douglas next do? It repeated the test in the afternoon, and this time there was another failure, with about twenty more serious injuries, including one case of permanent paralysis.

What psychological tendencies contributed to this terrible result? Well, using my, tendency list as a checklist, I come up with the following explanation. Reward-Superresponse Tendency drove McDonnell Douglas to act fast. It couldn't sell its airliner until it passed the test. Also pushing the company was Doubt-Avoidance Tendency with its natural drive to arrive at a decision and run with it. Then the government's direction that the test be realistic drove Authority-Misinfluence Tendency into the mischief of causing McDonnell Douglas to overreact by using what was obviously too dangerous a test method. By now the course of action had been decided, so Inconsistency Avoidance Tendency helped preserve the near idiotic plan. When all the old people got to the dark hangar, with its high airline cabin and concrete floor, the situation must have made McDonnell Douglas employees very queasy, but they saw other employees and supervisors not objecting. Social Proof Tendency, therefore, swamped the queasiness. And this allowed continued action as planned, a continuation that was aided by more Authority Overinfluence Tendency. Then came the disaster of the morning test with its failure, plus serious injuries. McDonnell Douglas ignored the strong disconfirming evidence from the failure of the first test because confirmation bias, aided by the triggering of strong Deprival Superreaction Tendency favored maintaining the original plan. McDonnell Douglas' Deprival Superreaction Tendency was now like that which causes a gambler, bent on getting even after a huge loss, to make his final big bet. After all, McDonnell Douglas was going to lose a lot if it didn't pass its test as scheduled. More psychology-based explanation can probably be made, but the foregoing discussion is complete enough to demonstrate the utility of my system when used in a checklist mode.

Q. In the practical world, what good is the thought system laid out in this list of tendencies? Isn't practical benefit prevented because these psychological tendencies are so thoroughly programmed into the human mind by broad evolution [the combination of genetic and cultural evolution] that we can't get rid of them?

Well, the answer is that the tendencies are probably much more good than bad. Otherwise, they wouldn't be there, working pretty well for man, given his condition and his limited brain capacity. So the tendencies can't be simply washed out automatically, and shouldn't be. Nevertheless, the psychological thought system described, when properly understood and used, enables the spread of wisdom and good conduct and facilitates the avoidance of disaster. Tendency is not always destiny, and knowing the tendencies and their antidotes can often help prevent trouble that would otherwise occur.

Here is a short list of examples reminding us of the great utility of elementary psychological knowledge:

1) Carl Braun's communication practices.

2) The use of simulators in pilot training.

3) The system of Alcoholics Anonymous.

4) Clinical training methods in medical schools.

5) The rules of the U.S. Constitutional Convention: totally secret meetings, no recorded vote by name until the final vote, votes reversible at any time before the end of the convention, then just one vote on the whole Constitution. These are very clever psychology-respecting rules. If the founders had used a different procedure, many people would have been pushed by various psychological tendencies into inconsistent, hardened positions. The elite founders got our Constitution through by a whisker only because they were psychologically acute.

6) The use of Granny's incentive-driven rule to manipulate oneself toward better performance of one's duties.

7) The Harvard Business School's emphasis on decision trees. When I was young and foolish I used to laugh at the Harvard Business School. I said, "They're teaching twenty-eight year-old people that high school algebra works in real life?" But later, I wised up and realized that it was very important that they do that to counter some bad effects from psychological tendencies. Better late than never.

8) The use of autopsy equivalents at Johnson & Johnson. At most corporations, if you make an acquisition and it turns out to be a disaster, all the people, paperwork, and presentations that caused the foolish acquisition are quickly forgotten. Nobody wants to be associated with the poor outcome by mentioning it. But at Johnson & Johnson, the rules make everybody revisit old acquisitions, comparing predictions with outcomes. That is a very smart thing to do.

9) The great example of Charles Darwin as he avoided confirmation bias, which has morphed into the extreme anti-confirmation-bias method of the "double blind" studies wisely required in drug research by the FDA.

10) The Warren Buffett rule for open-outcry auctions: Don't go.

Q. What special knowledge problems lie buried in the thought system demonstrated by your list?
Well, one answer is paradox. In social psychology, the more people learn about the system the less it is true, and this is what gives the system its great value as a preventer of bad outcomes and a driver of good outcomes. This result is paradoxical, and doesn't remind one of elementary physics, but so what. One can't get all the paradox out of pure math, so why should psychology be shocked by some paradox?

There is also some paradox in cognition change that works even when the manipulated person knows he is being manipulated. This creates a sort of paradox in a paradox, but, again, so what. I once much enjoyed an occasion of this sort. I drew this beautiful woman as my dinner partner many years ago. I'd never seen her before. She was married to a prominent Los Angeles man. She sat down next to me, turned her beautiful face up, and said, "Charlie, what one word accounts for your remarkable success in life?" I knew I was being manipulated by a practiced routine, and I just loved it. I never see this woman without a little lift in my spirits. And, by the way, I told her I was rational. You'll have to judge yourself whether that's true. I may be demonstrating some psychological tendency I hadn't planned on demonstrating.

Q. Don't we need more reconciliation of psychology and economics?
My answer is yes, and I suspect that some slight progress is being made. I have heard of one such example. Colin Camerer of Caltech, who works in "experimental economics," devised an interesting experiment in which he caused high I.Q. students, playing for real money, to pay price A+B for a "security" they knew would turn into A dollars at the end of the day. This foolish action occurred because the students were allowed to trade with each other in liquid market for the security. And some students then paid price A+B because they hoped to unload on other students at a higher price before the day was over. What I will now confidently predict is that, despite Camerer's experimental outcome, most economics and corporate finance professors who still believe in the "hard-form efficient market hypothesis" will retain their original belief. If so, this will be one more indication of how irrational smart people can be when influenced by psychological tendencies.

Q. Don't moral and prudential problems come with knowledge of these psychological tendencies?
The answer is yes. For instance, psychological knowledge improves persuasive power and, like other power, it can be used for good or ill. Captain Cook once played a psychology-based trick on his seamen to cause them to eat sauerkraut and avoid scurvy. In my opinion, this action was both ethical and wise under the circumstances, despite the deliberate manipulation involved. But ordinarily, when you try to use your knowledge of psychological tendencies in the artful manipulation of someone whose trust you need, you will be making both a moral and prudential error. The moral error is obvious. The prudential error comes because many intelligent people, targeted for conscious manipulation, are likely to figure out what you are trying to do and resent your action.

Q. Aren't there factual and reasoning errors in this talk?
The answer is yes, almost surely yes. The final revision was made from memory over about fifty hours by a man eighty-one years old, who never took a course in psychology and has read none of it, except one book on developmental psychology, for nearly fifteen years. Even so. I think the totality of my talk will stand up very well, and I hope all my descendants and friends will carefully consider what I have said. I even hope that more psychology professors will join me in:

1) making heavy use of inversion;
2) driving for a complete description of the psychological system so that it works better as a checklist; and
3) especially emphasizing effects from combinations of psychological tendencies.

Well that ends my talk. If in considering what I have said you had ten percent the fun I had saying it, you were lucky recipients.

Selections from three of Charlie Munger's talks, combined into one talk never made, after revisions by Charlie in 2005 that included considerable new material. The three talks were:

(1) The Bray Lecture at the Caltech Faculty Club, February 2, 1992;

(2) Talk under the Sponsorship of the Cambridge Center for Behavioral Studies at the Harvard Faculty Club, October 6, 1994; and the extensive revision by Charlie in 2005, made from memory unassisted by any research, occurred because Charlie thought he could do better at age eighty-one than he did more than ten years earlier when he knew less and was more harried by a crowded life and was speaking from rough notes instead of revising transcripts.

(3) Talk under the Sponsorship of the Cambridge Center for Behavioral Studies at the Boston Harbor Hotel, April 24, 1995.

Art of Stock Picking

By Charlie Munger, *(Warren Buffett's partner at Berkshire Hathaway)*

I'm going to play a minor trick on you today because the subject of my talk is the art of stock picking as a subdivision of the art of worldly wisdom. That enables me to start talking about worldly wisdom a much broader topic that interests me because I think all too little of it is delivered by modern educational systems, at least in an effective way.

And therefore, the talk is sort of along the lines that some behaviorist psychologists call Grandma's rule after the wisdom of Grandma when she said that you have to eat the carrots before you get the dessert.

The carrot part of this talk is about the general subject of worldly wisdom which is a pretty good way to start. After all, the theory of modern education is that you need a *general* education before you *specialize.* And I think to some extent, before you're going to be a great stock picker, you need some general education.

So, emphasizing what I sometimes waggishly call *remedial* worldly wisdom, I'm going to start by waltzing you through a few basic notions.

What is elementary, worldly wisdom? Well, the first rule is that you can't really know anything if you just remember isolated facts and try and bang 'em back. If the facts don't hang together on a latticework of theory, you don't have them in a usable form.

You've got to have *models* in your head. And you've got to array your experience both vicarious and direct on this latticework of models. You may have noticed students who just try to remember and pound back what is remembered. Well, they fail in school and in life. You've got to hang experience on a latticework of models in your head.

What are the models? Well, the first rule is that you've got to have *multiple* models because if you just have one or two that you're using, the nature of human psychology is such that you'll *torture* reality so that it fits your models, or at least you'll think it does. You become the equivalent of a chiropractor who, of course, is the great boob in medicine.

It's like the old saying, "To the man with only a hammer, every problem looks like a nail. "And of course, that's the way the chiropractor goes about practicing medicine. But that's a perfectly disastrous way to think and a perfectly disastrous way to operate in the world. So you've got to have multiple models.

And the models have to come from multiple disciplines because all the wisdom of the world is not to be found in one little academic department. That's why poetry professors, by and large, are so unwise in a worldly sense. They don't have enough models in their heads. So you've got to have models across a fair array of disciplines.

You may say, "My God, this is already getting way too tough. "But, fortunately, it *isn't* that tough because 80 or 90 important models will carry about 90% of the freight in making you a worldly wise person. And, of those, only a mere handful really carry very heavy freight.

So let's briefly review what kind of models and techniques constitute this basic knowledge that everybody has to have before they proceed to being really good at a narrow art like stock picking.

First there's mathematics. Obviously, you've got to be able to handle numbers and quantities basic arithmetic. And the great useful model, after compound interest, is the elementary math of permutations and combinations. And that was taught in my day in the sophomore year in high school. I suppose by now in great private schools, it's probably down to the eighth grade or so.

It's very simple algebra. It was all worked out in the course of about one year between Pascal and Fermat. They worked it out casually in a series of letters.

It's not that hard to learn. What is hard is to get so you use it routinely almost everyday of your life. The Fermat/Pascal system is dramatically consonant with the way that the world works. And it's fundamental truth. So you simply have to have the technique.

Many educational institutions - although not nearly enough have realized this. At Harvard Business School, the great quantitative thing that bonds the first year class together is what they call decision tree theory. All they do is take high school algebra and apply it to real life problems. And the students love it. They're amazed to find that high school algebra works in life....

By and large, as it works out, people can't naturally and automatically do this. If you understand elementary psychology, the reason they can't is really quite simple: The basic neural network of the brain is there through broad genetic and cultural evolution. And it's not Fermat / Pascal. It uses a very crude, shortcut type of approximation. It's got elements of Fermat / Pascal in it. However, it's not good.

So you have to learn in a very usable way this very elementary math and use it routinely in life - just the way if you want to become a golfer, you can't use the natural swing that broad evolution gave you. You have to *learn*to have a certain grip and swing in a different way to realize your full potential as a golfer.

If you don't get this elementary, but mildly unnatural, mathematics of elementary probability into your repertoire, then you go through a long life like a one-legged man in an ass-kicking contest. You're giving a *huge* advantage to everybody else.

One of the advantages of a fellow like Buffett, whom I've worked with all these years, is that he *automatically* thinks in terms of decision trees and the elementary math of permutations and combinations....

Obviously, you have to know accounting. It's the language of practical business life. It was a *very* useful thing to deliver to civilization. I've heard it came to civilization through Venice which of course was once the great commercial power in the Mediterranean. However, double-entry bookkeeping was a hell of an invention.

And it's not that hard to understand.

But you have to know enough about it to understand its limitations - because although accounting is the starting place, it's only a crude approximation. And it's not very hard to understand its limitations. For example, everyone can see that you have to more or less just guess at the useful life of a jet airplane or anything like that. Just because you express the depreciation rate in neat numbers doesn't make it anything you really know.

In terms of the limitations of accounting, one of my favorite stories involves a very great businessman named Carl Braun who created the CF Braun Engineering Company. It designed and built oil refineries - which is very hard to do. And Braun would get them to come in on time and not blow up and have efficiencies and so forth. This is a major art.

And Braun, being the thorough Teutonic type that he was, had a number of quirks. And one of them was that he took a look at standard accounting and the way it was applied to building oil refineries and he said, "This is asinine."

So he threw all of his accountants out and he took his engineers and said, "Now, we'll devise our *own* system of accounting to handle this process. "And in due time, accounting adopted a lot of Carl Braun's notions. So he was a formidably willful and talented man who demonstrated both the importance of accounting and the importance of knowing its limitations.

He had another rule, from psychology, which, if you're interested in wisdom, ought to be part of your repertoire - like the elementary mathematics of permutations and combinations.

His rule for all the Braun Company's communications was called the five W's - you had to tell *who* was going to do *what, where, when* and *why.* And if you wrote a letter or directive in the Braun Company telling somebody to do something, and you didn't tell him why, you could get fired. In fact, you would get fired if you did it twice.

You might ask why that is so important? Well, again that's a rule of psychology. Just as you think better if you array knowledge on a bunch of models that are basically answers to the question, *why, why, why,* if you always tell people why, they'll understand it better, they'll consider it more important, and they'll be more likely to comply. Even if they don't understand your reason, they'll be more likely to comply.

So there's an iron rule that just as you want to start getting worldly wisdom by asking why, why, why, in communicating with other people about everything, you want to include why, why, why. Even if it's obvious, it's wise to stick in the why.

Which models are the most reliable? Well, obviously, the models that come from hard science and engineering are the most reliable models on this Earth. And engineering quality control - at least the guts of it that matters to you and me and people who are not professional engineers - is very much based on the elementary mathematics of Fermat and Pascal:

It costs so much and you get so much less likelihood of it breaking if you spend this much. It's all elementary high school mathematics. And an elaboration of that is what Deming brought to Japan for all of that quality control stuff.

I don't think it's necessary for most people to be terribly facile in statistics. For example, I'm not sure that I can even pronounce the Poisson distribution. But I know what a Gaussian or normal distribution looks like and I know that events and huge aspects of reality end up distributed that way. So I can do a rough calculation.

But if you ask me to work out something involving a Gaussian distribution to ten decimal points, I can't sit down and do the math. I'm like a poker player who's learned to play pretty well without mastering Pascal.

And by the way, that works well enough. But you have to understand that bell-shaped curve at least roughly as well as I do.

And, of course, the engineering idea of a backup system is a very powerful idea. The engineering idea of breakpoints that's a very powerful model, too. The notion of a critical mass that comes out of physics is a very powerful model.

All of these things have great utility in looking at ordinary reality. And all of this cost-benefit analysis - hell, that's all elementary high school algebra, too. It's just been dolled up a little bit with fancy lingo.

I suppose the next most reliable models are from biology/ physiology because, after all, all of us are programmed by our genetic makeup to be much the same.

And then when you get into psychology, of course, it gets very much more complicated. But it's an ungodly important subject if you're going to have any worldly wisdom.

And you can demonstrate that point quite simply: There's not a person in this room viewing the work of a very ordinary professional magician who doesn't see a lot of things happening that aren't happening and not see a lot of things happening that are happening.

And the reason why is that the perceptual apparatus of man has shortcuts in it. The brain cannot have unlimited circuitry. So someone who knows how to take advantage of those shortcuts and cause the brain to miscalculate in certain ways can cause you to see things that aren't there.

Now you get into the cognitive function as distinguished from the perceptual function. And there, you are equally more than equally in fact likely to be misled. Again, your brain has a shortage of circuitry and so forth and it's taking all kinds of little automatic shortcuts.

So when circumstances combine in certain ways or more commonly, your fellow man starts acting like the magician and manipulates you on purpose by causing your cognitive dysfunction you're a patsy.

And so just as a man working with a tool has to know its limitations, a man working with his cognitive apparatus has to know its limitations. And this knowledge, by the way, can be used to control and motivate other people....

So the most useful and practical part of psychology which I personally think can be taught to any intelligent person in a week is ungodly important. And nobody taught it to me by the way. I had to learn it later in life, one piece at a time. And it was fairly laborious. It's so elementary though that, when it was all over, I felt like a fool.

And yeah, I'd been educated at Cal Tech and the Harvard Law School and so forth. So very eminent places mis-educated people like you and me.

The elementary part of psychology - the psychology of misjudgment, as I call it is a terribly important thing to learn. There are about 20 little principles. And they interact, so it gets slightly complicated. But the guts of it is unbelievably important.

Terribly smart people make totally bonkers mistakes by failing to pay heed to it. In fact, I've done it several times during

the last two or three years in a very important way. You never get totally over making silly mistakes.

There's another saying that comes from Pascal which I've always considered one of the really accurate observations in the history of thought. Pascal said in essence, "The mind of man at one and the same time is both the glory and the shame of the universe."

And that's exactly right. It has this enormous power. However, it also has these standard malfunctions that often cause it to reach wrong conclusions. It also makes man extraordinarily subject to manipulation by others. For example, roughly half of the army of Adolf Hitler was composed of believing Catholics. Given enough clever psychological manipulation, what human beings will do is quite interesting.

Personally, I've gotten so that I now use a kind of two-track analysis. First, what are the factors that really govern the *interests* involved, rationally considered? And second, what are the *subconscious* influences where the brain at a subconscious level is automatically doing these things which by and large are useful, but which often malfunction.

One approach is rationality the way you'd work out a bridge problem: by evaluating the real interests, the real probabilities and so forth. And the other is to evaluate the psychological factors that cause subconscious conclusions many of which are wrong.

Now we come to another somewhat less reliable form of human wisdom microeconomics. And here, I find it quite useful to think of a free market economy or partly free market economy as sort of the equivalent of an ecosystem....

This is a very unfashionable way of thinking because early in the days after Darwin came along, people like the robber barons assumed that the doctrine of the survival of the fittest authenticated them as deserving power you know, "I'm the richest. Therefore, I'm the best. God's in his heaven, etc."

And that reaction of the robber barons was so irritating to people that it made it unfashionable to think of an economy as an ecosystem. But the truth is that it is a lot like an ecosystem. And you get many of the same results.

Just as in an ecosystem, people who narrowly specialize can get terribly good at occupying some little niche. Just as animals flourish in niches, similarly, people who specialize in the business world - and get very good because they specialize frequently find good economics that they wouldn't get any other way.

And once we get into microeconomics, we get into the concept of advantages of scale. Now we're getting closer to investment analysis because in terms of which businesses succeed and which businesses fail, advantages of scale are ungodly important.

For example, one great advantage of scale taught in all of the business schools of the world is cost reductions along the so-called experience curve. Just doing something complicated in more and more volume enables human beings, who are trying to improve and are motivated by the incentives of capitalism, to do it more and more efficiently.

The very nature of things is that if you get a whole lot of volume through your joint, you get better at processing that volume. That's an enormous advantage. And it has a lot to do with which businesses succeed and fail....

Let's go through a list albeit an incomplete one of possible advantages of scale. Some come from simple geometry. If you're building a great spherical tank, obviously as you build it bigger, the amount of steel you use in the surface goes up with the square and the cubic volume goes up with the cube. So as you increase the dimensions, you can hold a lot more volume per unit area of steel.

And there are all kinds of things like that where the simple geometry the simple reality gives you an advantage of scale.

For example, you can get advantages of scale from TV advertising. When TV advertising first arrived when talking color pictures first came into our living rooms it was an unbelievably powerful thing. And in the early days, we had three networks that had whatever it was say 90% of the audience.

Well, if you were Proctor & Gamble, you could afford to use this new method of advertising. You could afford the very expensive cost of network television because you were selling so many cans and bottles. Some little guy couldn't. And there was no way of buying it in part. Therefore, he couldn't use it. In effect, if you didn't have a big volume, you couldn't use network TV advertising which was the most effective technique.

So when TV came in, the branded companies that were already big got a huge tail wind. Indeed, they prospered and prospered and prospered until some of them got fat and foolish, which happens with prosperity - at least to some people....

And your advantage of scale can be an informational advantage. If I go to some remote place, I may see Wrigley chewing gum alongside Glotz's chewing gum. Well, I know that Wrigley is a satisfactory product, whereas I don't know anything about Glotz's. So if one is 40 cents and the other is 30 cents, am I going to take something I don't know and put it in my mouth which is a pretty personal place, after all for a lousy dime?

So, in effect, Wrigley , simply by being so well known, has advantages of scale what you might call an informational advantage.

Another advantage of scale comes from psychology. The psychologists use the term “social proof”. We are all influenced subconsciously and to some extent consciously by what we see others do and approve. Therefore, if everybody's buying something, we think it's better. We don't like to be the one guy who's out of step.

Again, some of this is at a subconscious level and some of it isn't. Sometimes, we consciously and rationally think, "Gee, I don't know much about this. They know more than I do. Therefore, why shouldn't I follow them?"

The social proof phenomenon which comes right out of psychology gives huge advantages to scale - for example, with very wide distribution, which of course is hard to get. One advantage of Coca-Cola is that it's *available* almost everywhere in the world.

Well, suppose you have a little soft drink. Exactly how do you make it available all over the Earth? The worldwide distribution setup which is slowly won by a big enterprise gets to be a *huge* advantage.... And if you think about it, once you get enough advantages of that type, it can become very hard for anybody to dislodge you.

There's *another* kind of advantage to scale. In some businesses, the very nature of things is to sort of cascade toward the overwhelming dominance of one firm.

The most obvious one is daily newspapers. There's practically no city left in the U.S., aside from a few very big ones, where there's more than one daily newspaper.

And again, that's a scale thing. Once I get most of the circulation, I get most of the advertising. And once I get most of the advertising and circulation, why would anyone want the thinner paper with less information in it? So it tends to cascade to a winner take all situation. And that's a separate form of the advantages of scale phenomenon.

Similarly, all these huge advantages of scale allow greater specialization within the firm. Therefore, each person can be better at what he does.

And these advantages of scale are so great, for example, that when Jack Welch came into General Electric, he just said, "To hell with it. We're either going to be # 1 or #2 in every field we're in or we're going to be out. I don't care how many people I have to fire and what I have to sell. We're going to be #I or #2 or out."

That was a very tough-minded thing to do, but I think it was a very correct decision if you're thinking about maximizing shareholder wealth. And I don't think it's a bad thing to do for a civilization either, because I think that General Electric is stronger for having Jack Welch there.

And there are also disadvantages of scale. For example, we by which I mean Berkshire Hathaway - are the largest shareholder in Capital Cities /ABC. And we had trade publications there that got murdered where our competitors beat us. And the way they beat us was by going to a narrower specialization.

We'd have a travel magazine for business travel. So somebody would create one which was addressed solely at corporate travel departments. Like an ecosystem, you're getting a narrower and narrower specialization.

Well, they got much more efficient. They could tell more to the guys who ran corporate travel departments. Plus, they didn't have to waste the ink and paper mailing out stuff that corporate travel departments weren't interested in reading. It was a more efficient system. And they beat our brains out as we relied on our broader magazine.

That's what happened to *The* Saturday Evening Post and all those things. They're gone. What we have now is Motorcross which is read by a bunch of nuts who like to participate in tournaments where they turn somersaults on their motorcycles. But they care about it. For them, it's the principle purpose of life. A magazine called Motorcross is a total necessity to those people. Arid its profit margins would make you salivate.

Just think of how narrowcast that kind of publishing is. So occasionally, scaling down and intensifying gives you the big advantage. Bigger is not always better.

The great defect of scale, of course, which makes the game interesting - so that the big people don't always win - is that as you get big, you get the bureaucracy. And with the bureaucracy comes the territoriality - which is again grounded in human nature.

And the incentives are perverse. For example, if you worked for AT&T in my day, it was a great bureaucracy. Who in the hell was really thinking about the shareholder or anything else? And in a bureaucracy, you think the work is done when it goes out of your in-basket into somebody else's in-basket. But, of course, it isn't. It's not done until AT&T delivers what it's supposed to deliver. So you get big, fat, dumb, unmotivated bureaucracies.

They also tend to become somewhat corrupt. In other words, if I've got a department and you've got a department and we kind of share power running this thing, there's sort of an unwritten rule: "If you won't bother me, I won't bother you and we're both happy. "So you get layers of management and associated costs that nobody needs. Then, while people are justifying all these layers, it takes forever to get anything done. They're too slow to make decisions and nimbler people run circles around them.

The constant curse of scale is that it leads to big, dumb bureaucracy - which, of course, reaches its highest and worst form in government where the incentives are really awful. That doesn't mean we don't need governments - because we do. But it's a terrible problem to get big bureaucracies to behave.

So people go to stratagems. They create little decentralized units and fancy motivation and training programs. For example, for a big company, General Electric has fought bureaucracy with amazing skill. But that's because they have a combination of a genius and a fanatic running it. And they put him in young enough so he gets a long run. Of course, that's Jack Welch.

But bureaucracy is terrible.... And as things get very powerful and very big, you can get some really dysfunctional behavior. Look at Westinghouse. They blew billions of dollars on a bunch of dumb loans to real estate developers. They put some guy who'd come up by some career path - I don't know exactly what it was, but it could have been refrigerators or something - and all of a sudden, he's loaning money to real estate developers building hotels. It's a very unequal contest. And in due time, they lost all those billions of dollars.

CBS provides an interesting example of another rule of psychology namely, Pavlovian association. If people tell you what you really don't want to hear what's unpleasant there's an almost automatic reaction of antipathy. You have to train yourself out of it. It isn't foredestined that you have to be this way. But you will tend to be this way if you don't think about it.

Television was dominated by one network - CBS in its early days. And Paley was a god. But he didn't like to hear what he didn't like to hear. And people soon learned that. So they told Paley only what he liked to hear. Therefore, he was soon living in a little cocoon of unreality and everything else was corrupt although it was a great business.

So the idiocy that crept into the system was carried along by this huge tide. It was a Mad Hatter's tea party the last ten years under Bill Paley.

And that is not the only example by any means. You can get severe malfunction in the high ranks of business. And of course, if you're investing, it can make a lot of difference. If you take all the acquisitions that CBS made under Paley, after the acquisition of the network itself, with all his advisors his investment bankers, management consultants and so forth who were getting paid very handsomely it was absolutely *terrible.*

For example, he gave something like 20% of CBS to the Dumont Company for a television set manufacturer which was destined to go broke. I think it lasted all of two or three years or something like that. So very soon after he'd issued all of that stock, Dumont was history. You get a lot of dysfunction in a big fat, powerful place where no one will bring

unwelcome reality to the boss.

So life is an everlasting battle between those two forces - to get these advantages of scale on one side and a tendency to get a lot like the U.S. Agriculture Department on the other side - where they just sit around and so forth. I don't know exactly what they do. However, I do know that they do very little useful work.

On the subject of advantages of economies of scale, I find chain stores quite interesting. Just think about it. The concept of a chain store was a fascinating invention. You get this huge purchasing power which means that you have lower merchandise costs. You get a whole bunch of little laboratories out there in which you can conduct experiments. And you get specialization.

If one little guy is trying to buy across 27 different merchandise categories influenced by traveling salesmen, he's going to make a lot of poor decisions. But if your buying is done in headquarters for a huge bunch of stores, you can get very bright people that know a lot about refrigerators and so forth to do the buying.

The reverse is demonstrated by the little store where one guy is doing all the buying. It's like the old story about the little store with salt all over its walls. And a stranger comes in and says to the storeowner, "You must sell a lot of salt." And he replies, "No, I don't. But you should see the guy who *sells* me salt."

So there are huge purchasing advantages. And then there are the slick systems of forcing everyone to do what works. So a chain store can be a fantastic enterprise.

It's quite interesting to think about Wal-Mart starting from a single store in Bentonville, Arkansas against Sears, Roebuck with its name, reputation and all of its billions. How does a guy in Bentonville, Arkansas with no money blow right by Sears, Roebuck? And he does it in his own lifetime - in fact, during his own *late* lifetime because he was already pretty old by the time he started out with one little store....

He played the chain store game harder and better than anyone else. Walton invented practically *nothing.* But he copied everything anybody else ever did that was smart - and he did it with more fanaticism and better employee manipulation. So he just blew right by them all.

He also had a very interesting competitive strategy in the early days. He was like a prizefighter who wanted a great record so he could be in the finals and make a big TV hit. So what did he do? He went out and fought 42 palookas. Right? And the result was knockout, knockout, knockout 42 times.

Walton, being as shrewd as he was, basically broke other small town merchants in the early days. With his more efficient system, he might not have been able to tackle some titan head-on at the time. But with his better system, he could destroy those small town merchants. And he went around doing it time after time after time. Then, as he got bigger, he started destroying the *big* boys.

Well, that was a very, very shrewd strategy.

You can say, "Is this a nice way to behave? "Well, capitalism is a pretty brutal place. But I personally think that the world is *better* for having Wal-Mart. I mean you can idealize small town life. But I've spent a fair amount of time in small towns. And let me tell you - you shouldn't get too idealistic about all those businesses he destroyed.

Plus, a lot of people who work at Wal-Mart are very high grade, bouncy people who are raising nice children. I have no feeling that an inferior culture destroyed a superior culture. I think that is nothing more than nostalgia and delusion. But, at any rate, it's an interesting model of how the scale of things and fanaticism combine to be very powerful.

And it's also an interesting model on the other side how with all its great advantages, the disadvantages of bureaucracy did such terrible damage to Sears, Roebuck. Sears had layers and layers of people it didn't need. It was very bureaucratic. It was slow to think. And there was an established way of thinking. If you poked your head up with a new thought, the system kind of turned against you. It was everything in the way of a dysfunctional big bureaucracy that you would expect.

In all fairness, there was also much that was good about it. But it just wasn't as lean and mean and shrewd and effective as Sam Walton. And, in due time, all its advantages of scale were not enough to prevent Sears from losing heavily to Wal-Mart and other similar retailers.

Here's a model that we've had trouble with. Maybe you'll be able to figure it out better. Many markets get down to two or three big competitors or five or six. And in some of those markets, nobody makes any money to speak of. But in others, everybody does very well.

Over the years, we've tried to figure out why the competition in some markets gets sort of rational from the investor's point of view so that the shareholders do well, and in other markets, there's destructive competition that destroys shareholder wealth.

If it's a pure commodity like airline seats, you can understand why no one makes any money. As we sit here, just think of what airlines have given to the world safe travel, greater experience, time with your loved ones, you name it. Yet, the net amount of money that's been made by the shareholders of airlines since Kitty Hawk, is now a negative figure - a substantial negative figure. Competition was so intense that, once it was unleashed by deregulation, it ravaged shareholder wealth in the airline business.

Yet, in other fields like cereals, for example almost all the big boys make out. If you're some kind of a medium grade cereal maker, you might make 15% on your capital. And if you're really good, you might make 40%.But why are cereals so profitable despite the fact that it looks to me like they're competing like crazy with promotions, coupons and everything else? I don't fully understand it.

Obviously, there's a brand identity factor in cereals that doesn't exist in airlines. That must be the main factor that accounts for it.

And maybe the cereal makers by and large have learned to be less crazy about fighting for market share - because if you get even one person who's hell-bent on gaining market share.... For example, if I were Kellogg and I decided that I had to have 60% of the market, I think I could take most of the profit out of cereals. I'd ruin Kellogg in the process. But I think I could do it.

In some businesses, the participants behave like a demented Kellogg. In other businesses, they don't. Unfortunately, I do not have a perfect model for predicting how that's going to happen.

For example, if you look around at bottler markets, you'll find many markets where bottlers of Pepsi and Coke both make a lot of money and many others where they destroy most of the profitability of the two franchises. That must get down to the peculiarities of individual adjustment to market capitalism. I think you'd have to know the people involved to fully understand what was happening.

In microeconomics, of course, you've got the concept of patents, trademarks, exclusive franchises and so forth. Patents are quite interesting. When I was young, I think more money went into patents than came out. Judges tended to throw them out based on arguments about what was really invented and what relied on prior art. That isn't altogether clear.

But they changed that. They didn't change the laws. They just changed the administration - so that it all goes to one patent court. And that court is now very much more pro-patent. So I think people are now starting to make a lot of money out of owning patents.

Trademarks, of course, have always made people a lot of money. A trademark system is a wonderful thing for a big operation if it's well known.

The exclusive franchise can also be wonderful. If there were only three television channels awarded in a big city and you owned one of them, there were only so many hours a day that you could be on.So you had a natural position in an oligopoly in the pre-cable days.

And if you get the franchise for the only food stand in an airport, you have a captive clientele and you have a small monopoly of a sort.

The great lesson in microeconomics is to discriminate between when technology is going to *help you* and when it's going to kill you.And most people do not get this straight in their heads. But a fellow like Buffett does.

For example, when we were in the textile business, which is a terrible commodity business, we were making low-end textiles which are a real commodity product. And one day, the people came to Warren and said, "They've invented a

new loom that we think will do twice as much work as our old ones."

And Warren said, "Gee, I hope this doesn't work because if it does, I'm going to close the mill." And he meant it.

What was he thinking? He was thinking, "It's a lousy business. We're earning substandard returns and keeping it open just to be nice to the elderly workers.B ut we're not going to put huge amounts of new capital into a lousy business."

And he knew that the huge productivity increases that would come from a better machine introduced into the production of a commodity product would all go to the benefit of the buyers of the textiles. Nothing was going to stick to our ribs as owners.

That's such an obvious concept - that there are all kinds of wonderful new inventions that give you nothing as owners except the opportunity to spend a lot more money in a business that's still going to be lousy. The money still won't come to you. All of the advantages from great improvements are going to flow through to the customers.

Conversely, if you own the only newspaper in Oshkosh and they were to invent more efficient ways of composing the whole newspaper, then when you got rid of the old technology and got new fancy computers and so forth, all of the savings would come right through to the bottom line.

In all cases, the people who sell the machinery - and, by and large, even the internal bureaucrats urging you to buy the equipment show you projections with the amount you'll save at current prices with the new technology. However, they don't do the second step of the analysis which is to determine how much is going stay home and how much is just going to flow through to the customer. I've never seen a single projection incorporating that second step in my life. And I see them all the time. Rather, they always read: "This capital outlay will save you so much money that it will pay for itself in three years."

So you keep buying things that will pay for themselves in three years. And after 20 years of doing it, somehow you've earned a return of only about 4% per annum. That's the textile business.

And it isn't that the machines weren't better. It's just that the savings didn't go to you. The cost reductions came through all right. But the benefit of the cost reductions didn't go to the guy who bought the equipment. It's such a simple idea. It's so basic. And yet it's so often forgotten.

Then there's another model from microeconomics which I find very interesting. When technology moves as fast as it does in a civilization like ours, you get a phenomenon which I call competitive destruction. You know, you have the finest buggy whip factory and all of a sudden in comes this little horseless carriage. And before too many years go by, your buggy whip business is dead. You either get into a different business or you're dead - you're destroyed. It happens again and again and again.

And when these new businesses come in, there are *huge* advantages for the early birds.And when you're an early bird, there's a model that I call "surfing" - when a surfer gets up and catches the wave and just stays there, he can go a long, long time. But if he gets off the wave, he becomes mired in shallows....

But people get long runs when they're right on the edge of the wave - whether it's Microsoft or Intel or all kinds of people, including National Cash Register in the early days.

The cash register was one of the great contributions to civilization. It's a wonderful story. Patterson was a small retail merchant who didn't make any money. One day, somebody sold him a crude cash register which he put into his retail operation. And it instantly changed from losing money to earning a profit because it made it so much harder for the employees to steal....

But Patterson, having the kind of mind that he did, didn't think, "Oh, good for my retail business." He thought, "I'm going into the cash register business. "And, of course, he created National Cash Register.

And he "surfed". He got the best distribution system, the biggest collection of patents and the best of everything. He was a fanatic about everything important as the technology developed. I have in my files an early National Cash Register Company report in which Patterson described his methods and objectives. And a well-educated orangutan could see that buying into partnership with Patterson in those early days, given his notions about the cash register business, was a total 100% cinch.

And, of course, that's exactly what an investor should be looking for. In a long life, you can expect to profit heavily from at least a few of those opportunities if you develop the wisdom and will to seize them. At any rate, "surfing" is a very powerful model.

However, Berkshire Hathaway , by and large, does not invest in these people that are "surfing" on complicated technology. After all, we're cranky and idiosyncratic - as you may have noticed.

And Warren and I don't feel like we have any great advantage in the high-tech sector. In fact, we feel like we're at a big disadvantage in trying to understand the nature of technical developments in software, computer chips or what have you. So we tend to avoid that stuff, based on our personal inadequacies.

Again, that is a very, very powerful idea. Every person is going to have a circle of competence. And it's going to be very hard to advance that circle. If I had to make my living as a musician.... I can't even *think* of a level low enough to describe where I would be sorted out to if music were the measuring standard of the civilization.

So you have to figure out what your own aptitudes are. If you play games where other people have the aptitudes and you don't, you're going to lose. And that's as close to certain as any prediction that you can make. You have to figure out where *you've* got an edge. And you've got to play within your *own* circle of competence.

If you want to be the best tennis player in the world, you may start out trying and soon find out that it's hopeless - that other people blow right by you. However, if you want to become the best plumbing contractor in Bemidji, that is probably doable by two-thirds of you. It takes a will.I t takes the intelligence. But after a while, you'd gradually know all about the plumbing business in Bemidji and *master* the art. That is an attainable objective, given enough discipline. And people who could never win a chess tournament or stand in center court in a respectable tennis tournament can rise quite high in life by slowly developing a circle of competence - which results partly from what they were born with and partly from what they slowly develop through work.

So some edges can be acquired. And the game of life to some extent for most of us is trying to be something like a good plumbing contractor in Bemidji. Very few of us are chosen to win the world's chess tournaments.

Some of you may find opportunities "surfing" along in the new high-tech fields the Intels, the Microsofts and so on. The fact that we don't think we're very good at it and have pretty well stayed out of it doesn't mean that it's irrational for you to do it.

Well, so much for the basic microeconomics models, a little bit of psychology, a little bit of mathematics, helping create what I call the general substructure of worldly wisdom. Now, if you want to go on from carrots to dessert, I'll turn to stock picking - trying to draw on this general worldly wisdom as we go.

I don't want to get into emerging markets, bond arbitrage and so forth. I'm talking about nothing but plain vanilla stock picking. That, believe me, is complicated enough. And I'm talking about *common* stock picking.

The first question is, "What is the nature of the stock market?" And that gets you directly to this efficient market theory that got to be the rage a *total* rage long after I graduated from law school.

And it's rather interesting because one of the greatest economists of the world is a substantial shareholder in Berkshire Hathaway and has been for a long time. His textbook always taught that the stock market was perfectly efficient and that nobody could beat it. But his *own* money went into Berkshire and made him wealthy. So, like Pascal in his famous wager, he hedged his bet.

Is the stock market so efficient that people can't beat it? Well, the efficient market theory is obviously *roughly* right meaning that markets are *quite* efficient and it's *quite* hard for anybody to beat the market by significant margins as a stock picker by just being intelligent and working in a disciplined way.

Indeed, the average result has to be the average result. By definition, *everybody* can't beat the market. As I always say, the iron rule of life is that only 20% of the people can be in the top fifth. That's just the way it is. So the answer is that it's partly efficient and partly inefficient.

And, by the way, I have a name for people who went to the extreme efficient market theory which is "bonkers". It was an

intellectually consistent theory that enabled them to do pretty mathematics. So I understand its seductiveness to people with large mathematical gifts. It just had a difficulty in that the fundamental assumption did not tie properly to reality.

Again, to the man with a hammer, every problem looks like a nail. If you're good at manipulating higher mathematics in a consistent way, why not make an assumption which enables you to use your tool?

The model I like to sort of simplify the notion of what goes on in a market for common stocks is the pari-mutuel system at the racetrack. If you stop to think about it, a pari-mutuel system is a *market.* Everybody goes there and bets and the odds change based on what's bet. That's what happens in the stock market.

Any damn fool can see that a horse carrying a light weight with a wonderful win rate and a good post position etc., etc. is way more likely to win than a horse with a terrible record and extra weight and so on and so on.But if you look at the odds, the bad horse pays 100 to 1, whereas the good horse pays 3 to 2.Then it's not clear which is statistically the best bet using the mathematics of Fermat and Pascal. The prices have changed in such a way that it's very hard to beat the system.

And then the track is taking 17% off the top. So not only do you have to outwit all the other betters, but you've got to outwit them by such a big margin that on average, you can afford to take 17% of your gross bets off the top and give it to the house before the rest of your money can be put to work.

Given those mathematics, is it possible to beat the horses only using one's intelligence? Intelligence should give some edge, because lots of people who don't know anything go out and bet lucky numbers and so forth. Therefore, somebody who really thinks about nothing but horse performance and is shrewd and mathematical could have a very considerable edge, in the absence of the frictional cost caused by the house take.

Unfortunately, what a shrewd horseplayer's edge does in most cases is to reduce his average loss over a season of betting from the 17% that he would lose if he got the average result to maybe 10%.However, there are actually a few people who can beat the game after paying the full 17%.

I used to play poker when I was young with a guy who made a substantial living doing nothing but bet harness races.... Now, harness racing is a relatively inefficient market. You don't have the depth of intelligence betting on harness races that you do on regular races. What my poker pal would do was to think about harness races as his main profession. And he would bet only occasionally when he saw some mispriced bet available. And by doing that, after paying the full handle to the house - which I presume was around 17% - he made a substantial living.

You have to say that's rare. However, the market was not perfectly efficient. And if it weren't for that big 17% handle, lots of people would regularly be beating lots of other people at the horse races. It's efficient, yes. But it's not perfectly efficient. And with enough shrewdness and fanaticism, some people will get better results than others.

The stock market is the same way except that the house handle is so much lower. If you take transaction costs - the spread between the bid and the ask plus the commissions and if you don't trade too actively, you're talking about fairly low transaction costs. So that with enough fanaticism and enough discipline, some of the shrewd people are going to get way better results than average in the nature of things.

It is not a bit easy. And, of course, 50% will end up in the bottom half and 70% will end up in the bottom 70%.But some people will have an advantage. And in a fairly low transaction cost operation, they will get better than average results in stock picking.

How do you get to be one of those who is a winner - in a relative sense - instead of a loser?

Here again, look at the pari-mutuel system. I had dinner last night by absolute accident with the president of Santa Anita. He says that there are two or three betters who have a credit arrangement with them, now that they have off-track betting, who are actually beating the house. They're sending money out net after the full handle a lot of it to Las Vegas, by the way to people who are actually winning slightly, net, after paying the full handle. They're that shrewd about something with as much unpredictability as horse racing.

And the one thing that all those winning betters in the whole history of people who've beaten the pari-mutuel system have is quite simple. They bet very seldom.

It's not given to human beings to have such talent that they can just know everything about everything all the time. But it is given to human beings who work hard at it - who look and sift the world for a mispriced be that they can occasionally find one.

And the wise ones bet heavily when the world offers them that opportunity. They bet big when they have the odds. And the rest of the time, they don't. It's just that simple.

That is a very simple concept. And to me it's obviously right based on experience not only from the pari-mutuel system, but everywhere else.

And yet, in investment management, practically nobody operates that way. We operate that way - I'm talking about Buffett and Munger. And we're not alone in the world. But a huge majority of people have some other crazy construct in their heads And instead of waiting for a near cinch and loading up, they apparently ascribe to the theory that if they work a little harder or hire more business school students, they'll come to know everything about everything all the time.

To me, that's totally insane. The way to win is to work, work, work, work and hope to have a few insights.

How many insights do you need? Well, I'd argue: that you don't need many in a lifetime. If you look at Berkshire Hathaway and all of its accumulated billions, the top ten insights account for most of it. And that's with a very brilliant man Warren's a lot more able than I am and very disciplined devoting his lifetime to it. I don't mean to say that he's only had ten insights. I'm just saying, that most of the money came from ten insights.

So you can get very remarkable investment results if you think more like a winning pari-mutuel player. Just think of it as a heavy odds against game full of craziness with an occasional mispriced something or other. And you're probably not going to be smart enough to find thousands in a lifetime. And when you get a few, you really load up. It's just that simple.

When Warren lectures at business schools, he says, "I could improve your ultimate financial welfare by giving you a ticket with only 20 slots in it so that you had 20 punches - representing all the investments that you got to make in a lifetime. And once you'd punched through the card, you couldn't make any more investments at all."

He says, "Under those rules, you'd really think carefully about what you did and you'd be forced to load up on what you'd really thought about. So you'd do so much better."

Again, this is a concept that seems perfectly obvious to me. And to Warren, it seems perfectly obvious. But this is one of the very few business classes in the U.S. where anybody will be saying so. It just isn't the conventional wisdom.

To me, it's obvious that the winner has to bet very selectively. It's been obvious to me since very early in life. I don't know why it's not obvious to very many other people.

I think the reason why we got into such idiocy in investment management is best illustrated by a story that I tell about the guy who sold fishing tackle. I asked him, "My God, they're purple and green. Do fish really take these lures?" And he said, "Mister, I don't sell to fish."

Investment managers are in the position of that fishing tackle salesman. They're like the guy who was selling salt to the guy who already had too much salt. And as long as the guy will buy salt, why they'll *sell* salt. But that isn't what ordinarily works for the *buyer* of investment advice.

If you invested Berkshire Hathaway-style, it would be hard to get paid as an investment manager as well as they're currently paid - because you'd be holding a block of Wal-Mart and a block of Coca-Cola and a block of something else. You'd just sit there. And the client would be getting rich. And, after a while, the client would think, "Why am I paying this guy half a percent a year on my wonderful passive holdings?"

So what makes sense for the investor is different from what makes sense for the manager. And, as usual in human affairs, what determines the behavior are incentives for the decision maker.

From all business, my favorite case on incentives is Federal Express. The heart and soul of their system which creates the integrity of the product is having all their airplanes come to one place in the middle of the night and shift all the packages from plane to plane. If there are delays, the whole operation can't deliver a product full of integrity to Federal Express customers.

And it was always screwed up. They could never get it done on time. They tried everything moral suasion, threats, you name it. And nothing worked.

Finally, somebody got the idea to pay all these people not so much an *hour,* but so much a *shift* and when it's all done, they can all go home. Well, their problems cleared up overnight.

So getting the incentives right is a very, very important lesson. It was not obvious to Federal Express what the solution was. But maybe now, it will hereafter more often be obvious to you.

All right, we've now recognized that the market is efficient as a pari-mutuel system is efficient with the favorite more likely than the long shot to do well in racing, but not necessarily give any betting advantage to those that bet on the favorite.

In the stock market, some railroad that's beset by better competitors and tough unions may be available at one-third of its book value. In contrast, IBM in its heyday might be selling at 6 times book value. So it's just like the pari-mutuel system. Any damn fool could plainly see that IBM had better business prospects than the railroad. But once you put the *price* into the formula, it wasn't so clear anymore what was going to work best for a buyer choosing between the stocks. So it's a lot like a pari-mutuel system. And, therefore, it gets very hard to beat.

What style should the investor use as a picker of common stocks in order to try to beat the market - in other words, to get an above average long-term result? A standard technique that appeals to a lot of people is called "sector rotation". You simply figure out when oils are going to outperform retailers, etc., etc., etc. You just kind of flit around being in the hot sector of the market making better choices than other people. And presumably, over a long period of time, you get ahead.

However, I know of no really rich sector rotator. Maybe some people can do it. I'm not saying they can't. All I know is that all the people I know who got rich and I know a lot of them did not do it that way.

The second basic approach is the one that Ben Graham used much admired by Warren and me. As one factor, Graham had this concept of value to a private owner what the whole enterprise would sell for if it were available. And that was calculable in many cases.

Then, if you could take the stock price and multiply it by the number of shares and get something that was one third or less of sellout value, he would say that you've got a lot of edge going for you.Even with an elderly alcoholic running a stodgy business, this significant excess of real value per share working for you means that all kinds of good things can happen to you. You had a *huge* margin of safety - as he put it - by having this big excess value going for you.

But he was, by and large, operating when the world was in shell shock from the 1930s - which was the worst contraction in the English-speaking world in about 600 years. Wheat in Liverpool, I believe, got down to something like a 600-year low, adjusted for inflation. People were so shell-shocked for a long time thereafter that Ben Graham could run his Geiger counter over this detritus from the collapse of the 1930s and find things selling below their working capital per share and so on.

And in those days, working capital actually belonged to the shareholders. If the employees were no longer useful, you just sacked them all, took the working capital and stuck it in the owners' pockets. That was the way capitalism then worked.

Nowadays, of course, the accounting is not realistic because the minute the business starts contracting, significant assets are not there. Under social norms and the new legal rules of the civilization, so much is owed to the employees that, the minute the enterprise goes into reverse, some of the assets on the balance sheet aren't *there* anymore.

Now, that might not be true if you run a little auto dealership yourself. You may be able to run it in such a way that there's no health plan and this and that so that if the business gets lousy, you can take your working capital and go home. But IBM can't, or at least didn't. Just look at what disappeared from its balance sheet when it decided that it had to change size both because the world had changed technologically and because its market position had deteriorated.

And in terms of blowing it, IBM is some example. Those were brilliant, disciplined people. But there was enough turmoil in technological change that IBM got bounced off the wave after "surfing" successfully for 60 years. And that was some

collapse an object lesson in the difficulties of technology and one of the reasons why Buffett and Munger don't like technology very much. We don't think we're any good at it, and strange things can happen.

At any rate, the trouble with what I call the classic Ben Graham concept is that gradually the world wised up and those real obvious bargains disappeared. You could run your Geiger counter over the rubble and it wouldn't click.

But such is the nature of people who have a hammer - to whom, as I mentioned, every problem looks like a nail that the Ben Graham followers responded by changing the calibration on their Geiger counters. In effect, they started defining a bargain in a different way. And they kept changing the definition so that they could keep doing what they'd always done. And it *still* worked pretty well. So the Ben Graham intellectual system was a very good one.

Of course, the best part of it all was his concept of "Mr. Market". Instead of thinking the market was efficient, he treated it as a manic-depressive who comes by every day. And some days he says, "I'll sell you some of my interest for way less than you think it's worth." And other days, "Mr. Market" comes by and says, "I'll buy your interest at a price that's way higher than you think it's worth. "And you get the *option* of deciding whether you want to buy more, sell part of what you already have or do nothing at all.

To Graham, it was a blessing to be in business with a manic-depressive who gave you this series of options all the time. That was a very significant mental construct. And it's been very useful to Buffett, for instance, over his whole adult lifetime.

However, if we'd stayed with classic Graham the way Ben Graham did it, we would never have had the record we have. And that's because Graham wasn't *trying* to do what we did.

For example, Graham didn't want to ever talk to management. And his reason was that, like the best sort of professor aiming his teaching at a mass audience, he was trying to invent a system that *anybody* could use. And he didn't feel that the man in the street could run around and talk to managements and learn things. He also had a concept that the management would often couch the information very shrewdly to mislead. Therefore, it was very difficult. And that is still true, of course human nature being what it is.

And so having started out as Grahamites which, by the way, worked fine we gradually got what I would call better insights. And we realized that some company that was selling at 2 or 3 times book value could *still* be a hell of a bargain because of momentums implicit in its position, sometimes combined with an unusual managerial skill plainly present in some individual or other, or some system or other.

And once we'd gotten over the hurdle of recognizing that a thing could be a bargain based on quantitative measures that would have *horrified* Graham, we started thinking about better businesses.

And, by the way, the bulk of the billions in Berkshire Hathaway have come from the better businesses. Much of the first $200 or $300 million came from scrambling around with our Geiger counter. But the great bulk of the money has come from the great businesses.

And even some of the early money was made by being temporarily present in great businesses. Buffett Partnership, for example, owned American Express and Disney when they got pounded down.

Most investment managers are in a game where the clients expect them to know a lot about a lot of things. We didn't have any clients who could fire us at Berkshire Hathaway. So we didn't have to be governed by any such construct. And we came to this notion of finding a mispriced bet and loading up when we were very confident that we were right. So we're way less diversified. And I think our system is miles better.

However, in all fairness, I don't think a lot of money managers could successfully sell their services if they used our system. But if you're investing for 40 years in some pension fund, what difference does it make if the path from start to finish is a little more bumpy or a little different than everybody else's so long as it's all going to work out well in the end? So what if there's a little extra volatility.

In investment management today, everybody wants not only to win, but to have a yearly outcome path that never diverges very much from a standard path except on the upside. Well, that is a very artificial, crazy construct. That's the equivalent in investment management to the custom of binding the feet of Chinese women. It's the equivalent of what Nietzsche meant when he criticized the man who had a lame leg and was proud of it.

That is really hobbling yourself. Now, investment managers would say, "We *have* to be that way. That's how we're *measured. "*And they may be right in terms of the way the business is now constructed. But from the viewpoint of a rational consumer, the whole system's "bonkers" and draws a lot of talented people into socially useless activity.

And the Berkshire system is not "bonkers". It's so damned elementary that even bright people are going to have limited, really valuable insights in a very competitive world when they're fighting against other very bright, hardworking people.

And it makes sense to load up on the very few good insights you have instead of pretending to know everything about everything at all times. You're much more likely to do well if you start out to do something *feasible* instead of something that isn't feasible. Isn't that perfectly obvious?

How many of you have 56 brilliant ideas in which you have equal confidence? Raise your hands, please. How many of you have two or three insights that you have some confidence in? I rest my case.

I'd say that Berkshire Hathaway's system is adapting to the nature of the investment problem as it really is.

We've really made the money out of high quality businesses. In some cases, we bought the whole business. And in some cases, we just bought a big block of stock. But when you analyze what happened, the big money's been made in the high quality businesses. And most of the other people who've made a lot of money have done so in high quality businesses.

Over the long term, it's hard for a stock to earn a much better return than the business which underlies it earns. If the business earns 6% on capital over 40 years and you hold it for that 40 years, you're not going to make much different than a 6% return even if you originally buy it at a huge discount. Conversely, if a business earns 18% on capital over 20 or 30 years, even if you pay an expensive looking price, you'll end up with a fine result.

So the trick is getting into better businesses. And that involves all of these advantages of scale that you could consider momentum effects.

How do you get into these great companies? One method is what I'd call the method of finding them small get 'em when they're little. For example, buy Wal-Mart when Sam Walton first goes public and so forth. And a lot of people try to do just that. And it's a very beguiling idea. If I were a young man, I might actually go into it.

But it doesn't work for Berkshire Hathaway anymore because we've got too much money. We can't find anything that fits our size parameter that way. Besides, we're set in our ways. But I regard finding them small as a perfectly intelligent approach for somebody to try with discipline. It's just not something that I've done.

Finding 'em big obviously is very hard because of the competition. So far, Berkshire's managed to do it. But can we continue to do it? What's the next Coca-Cola investment for us? Well, the answer to that is I don't know. I think it gets harder for us all the time....

And ideally and we've done a lot of this you get into a great business which also has a great manager because management matters. For example, it's made a great difference to General Electric that Jack Welch came in instead of the guy who took over Westinghouse - a very great difference. So management matters, too.

And some of it is predictable. I do not think it takes a genius to understand that Jack Welch was a more insightful person and a better manager than his peers in other companies. Nor do I think it took tremendous genius to understand that Disney had basic momentums in place which are very powerful and that Eisner and Wells were very unusual managers.

So you do get an occasional opportunity to get into a wonderful business that's being run by a wonderful manager. And, of course, that's hog heaven day. If you don't load up when you get those opportunities, it's a *big* mistake.

Occasionally, you'll find a human being who's so talented that he can do things that ordinary skilled mortals can't. I would argue that Simon Marks who was second generation in Marks & Spencer of England was such a man. Patterson was such a man at National Cash Register. And Sam Walton was such a man.

These people do come along and in many cases, they're not all that hard to identify. If they've got a reasonable hand with the fanaticism and intelligence and so on that these people generally bring to the party then management can matter

much.

However, averaged out, betting on the quality of a business is better than betting on the quality of management. In other words, if you have to choose one, bet on the business momentum, not the brilliance of the manager.

But, very rarely. you find a manager who's so good that you're wise to follow him into what looks like a mediocre business.

Another very simple effect I very seldom see discussed either by investment managers or anybody else is the effect of taxes. If you're going to buy something which compounds for 30 years at 15% per annum and you pay one 35% tax at the very end, the way that works out is that after taxes, you keep 13.3% per annum.

In contrast, if you bought the same investment, but had to pay taxes every year of 35% out of the 15% that you earned, then your return would be 15% minus 35% of 15% or only 9.75% per year compounded. So the difference there is over 3.5%.And what 3.5% does to the numbers over long holding periods like 30 years is truly eye-opening. If you sit back for long, long stretches in great companies, you can get a huge edge from nothing but the way that income taxes work.

Even with a 10% per annum investment, paying a 35% tax at the end gives you 8.3% after taxes as an annual compounded result after 30 years. In contrast, if you pay the 35% each year instead of at the end, your annual result goes down to 6.5%.So you add nearly 2% of after-tax return per annum if you only achieve an average return by historical standards from common stock investments in companies with tiny dividend payout ratios.

But in terms of business mistakes that I've seen over a long lifetime, I would say that trying to minimize taxes too much is one of the great standard causes of really dumb mistakes. I see *terrible* mistakes from people being overly motivated by tax considerations.

Warren and I personally don't drill oil wells. We pay our taxes. And we've done pretty well, so far. Anytime somebody offers you a tax shelter from here on in life, my advice would be don't buy it.

In fact, any time anybody offers you *anything* with a big commission and a 200-page prospectus, don't buy it. Occasionally, you'll be wrong if you adopt "Munger's Rule". However, over a lifetime, you'll be a long way ahead - and you will miss a lot of unhappy experiences that might otherwise reduce your love for your fellow man.

There are *huge* advantages for an individual to get into a position where you make a few great investments and just sit back and wait: You're paying less to brokers. You're listening to less nonsense. And if it works, the governmental tax system gives you an extra 1, 2 or 3 percentage points per annum compounded.

And you think that most of you are going to get that much advantage by hiring investment counselors and paying them 1% to run around, incurring a lot of taxes on your behalf'? Lots of luck.

Are there any dangers in this philosophy? Yes. Everything in life has dangers. Since it's so obvious that investing in great companies works, it gets horribly overdone from time to time. In the "Nifty-Fifty" days, everybody could tell which companies were the great ones. So they got up to 50, 60 and 70 times earnings. And just as IBM fell off the wave, other companies did, too. Thus, a large investment disaster resulted from too high prices. And you've got to be aware of that danger....

So there are risks .Nothing is automatic and easy. But if you can find some fairly-priced great company and buy it and sit, that tends to work out very, very well indeed especially for an individual,

Within the growth stock model, there's a sub-position: There are actually businesses, that you will find a few times in a lifetime, where any manager could raise the return enormously just by raising prices and yet they haven't done it. So they have *huge* untapped pricing power that they're not using. That is the *ultimate* no-brainer.

That existed in Disney. It's such a unique experience to take your grandchild to Disneyland. You're not doing it that often .And there are lots of people in the country. And Disney found that it could raise those prices a lot and the attendance stayed right up.

So a lot of the great record of Eisner and Wells was utter brilliance but the rest came from just raising prices at Disneyland and Disneyworld and through video cassette sales of classic animated movies.

At Berkshire Hathaway, Warren and I raised the prices of See's Candy a little faster than others might have. And, of course, we invested in Coca-Cola - which had some untapped pricing power. And it also had brilliant management. So a Goizueta and Keough could do much more than raise prices.It was *perfect.*

You will get a few opportunities to profit from finding underpricing. There are actually people out there who don't price everything as high as the market will easily stand. And once you figure that out, it's like finding in the street - if you have the courage of your convictions.

If you look at Berkshire's investments where a lot of the money's been made and you look for the models, you can see that we twice bought into two newspaper towns which have since become one newspaper towns. So we made a bet to some extent....

In one of those The Washington Post we bought it at about 20% of the value to a private owner. So we bought it on a Ben Graham style basis at one fifth of obvious value and, in addition, we faced a situation where you had both the top hand in a game that was clearly going to end up with one winner and a management with a lot of integrity and intelligence. That one was a real dream. They're very high class people - the Katharine Graham family. That's why it was a dream an absolute, damn dream.

Of course, that came about back in '73 - 74.And that was almost like 1932. That was probably a once-in-40-years type denouement in the markets. That investment's up about 50 times over our cost.

If I were you, I wouldn't count on getting any investment in your lifetime quite as good as The Washington Post was in '73 and '74.

But it doesn't *have* to be that good to take care of you.

Let me mention another model. Of course, Gillette and Coke make fairly low-priced items and have a tremendous marketing advantage all over the world. And in Gillette's case, they keep surfing along new technology which is fairly simple by the standards of microchips. But it's hard for competitors to do.

So they've been able to stay constantly near the edge of improvements in shaving. There are whole countries where Gillette has more than 90% of the shaving market.

GEICO is a very interesting model. It's another one of the 100 or so models you ought to have in your head. I've had many friends in the sick business fix up game over a long lifetime. And they practically all use the following formula I call it the cancer surgery formula:

They look at this mess. And they figure out if there ' s anything sound left that can live on its own if they cut away everything else. And if they find anything sound, they just cut away everything else. Of course, if that doesn't work, they liquidate the business. But it frequently does work.

And GEICO had a perfectly *magnificent* business -submerged in a mess, but still working. Misled by success, GEICO had done some foolish things. They got to thinking that, because they were making a lot of money, they knew everything. And they suffered huge losses.

All they had to do was to cut out all the folly and go back to the perfectly wonderful business that was lying there. And when you think about it, that's a very simple model. And it's repeated over and over again.

And, in GEICO's case, think about all the money we passively made....It was a wonderful business combined with a bunch of foolishness that could easily be cut out. And people were coming in who were temperamentally and intellectually designed so they were going to cut it out. That is a model you want to look for.

And you may find one or two or three in a long lifetime that are very good. And you may find 20 or 30 that are good enough to be quite useful.

Finally, I'd like to once again talk about investment management. That is a funny business because on a net basis, the whole investment management business together gives no value added to all buyers combined. That's the way it has to work.

Of course, that isn't true of plumbing and it isn't true of medicine .If you're going to make your careers in the investment management business, you face a very peculiar situation. And most investment managers handle it with psychological denial just like a chiropractor. That is the standard method of handling the limitations of the investment management process. But if you want to live the best sort of life, I would urge each of you *not* to use the psychological denial mode.

I think a select few a small percentage of the investment managers can deliver value added. But I don't think brilliance alone is enough to do it. I think that you have to have a little of this discipline of calling your shots and loading up if you want to maximize your chances of becoming one who provides above average real returns for clients over the long pull.

But I'm just talking about investment managers engaged in common stock picking. I am agnostic elsewhere. I think there may well be people who are so shrewd about currencies and this, that and the other thing that they can achieve good long-term records operating on a pretty big scale in that way. But that doesn't happen to be my milieu. I'm talking about stock picking in American stocks.

I think it's hard to provide a lot of value added to the investment management client, but it's not impossible.

Document Link - http://www.vinvesting.com/docs/munger/art_stockpicking.html