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The engine of history

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Abstract

How a population/group feels about its future, its so-called "social mood", and how that mood biases collective events of all types is the focus of this article. Through a variety of examples running from trends in clothing styles to the collapse of world powers, the paper argues that the social mood dramatically influences the types of events we can expect to see on all time scales. The argument is advanced that the financial market price movements serve as a good "sociometer" for measuring the social mood on all time scales. Additionally, we present arguments showing that there is virtually no feedback from events to mood; that is, the mood is endogeneous to the population and is not determined by any sort of "outside forces". Finally, the paper concludes with a research program for turning the hypotheses advanced here into a full-fledged scientific theory of collective human behavior.

Keywords: *Social Mood, Socionomics, Sociometer, Group Psychology, Turning Points of Trends*

Tarih lokomotifi

Özet

Bu çalışma, bir anakütlenin/grubun geleceği ile ilgili olarak nasıl hissettiğine, ki buna sosyal ruh hali denir, ve bu ruh halinin her türden kollektif vakaya ne şekilde tesir ettiğine odaklanmaktadır. Giyim tarzına ilişkin eğilimlerden dünya güçlerinin çöküşüne dek uzanan çok çeşitli örnekler üzerinden giderek makale, sosyal ruh halinin tüm zaman ölçeklerinde görmeyi bekleyeceğimiz olgu çeşitlerini çarpıcı biçimde etkilediğini göstermektedir. Bu görüş, finansal pazar fiyatı hareketlerinin sosyal ruh halini ölçmek üzere tüm zaman ölçeklerinde iyi bir "sosyometre" olarak hizmet ettiğini de önerecek şekilde geliştirilmiştir. Tüm bunlara ek olarak bu çalışmada, vakalardan ruh haline neredeyse hiç geri bildirim olmadığını destekleyen görüşler sunuyoruz; yani, ruh halinin hiçbir tür "dış güç" etkisiyle belirlenmediğini, tamamıyla anakütleye özgü bir içsel değişken olduğunu ileri sürüyoruz. Çalışma, burada geliştirilen hipotezlerin kollektif insan davranışına ilişkin tam teşekküllü bilimsel bir teoriye dönüştürülmesine hizmet edecek bir araştırma programının sunulması ile sonuçlanmaktadır.

Anahtar Sözcükler: *Sosyal Ruh Hali, Sosyonomi, Sosyometre, Grup Psikolojisi, Eğilimlerde Dönüm Noktaları*

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1. The Strange Case of Enron

In the autumn of 2001, the financial collapse of the Enron Corporation hit the front pages of virtually every newspaper in the world. At the time it was the largest bankruptcy in US corporate history. But as scandals go, it turned out to be just one of many accounting "irregularities" that numerous American corporations had been practicing for the decade or more during the runaway bull market that began in the early 1980s. By far the most interesting aspect of the Enron collapse, though, was the public's reaction to the event. Basically, both the financial and general press promoted the view that the Enron accounting revelations had deeply discouraged investors, thereby *causing* a crisis of confidence on Wall Street. In essence, the conventional wisdom of the chattering classes was that Enron's collapse *generated* a negative social mood, which in turn led to a lack of investor confidence in the market.

Notice the italicized words in the preceding paragraph, "causing" and "generated." They suggest a direction of causality in social events, one that is so deeply hardwired into the collective subconscious that to question it is akin to challenging our taken-for-granted reality as to the way the world works. It's useful to consider the Enron situation as an entry point into the fundamental questions of what constitutes the social mood and how that mood, whatever it is, influences social events and actions. This will be our leitmotif throughout this article. Let's take a closer look at how the questions look in the specific context of this Enron situation.

A headline in *USA Today* in the spring of 2002 captured succinctly the mainline view of Enron social dynamics when it proclaimed to the world, "Scandals Shred Investors' Faith." The implication of this headline is that the market was moving along just fine—until the Enron revelations shattered people's confidence in stocks. If this line of reasoning were even approximately correct, one would have expected the market to experience a precipitous selloff *following* the revelation of Enron's accounting shenanigans and the company's consequent bankruptcy filing. If you're tempted to believe this fiction, have a look at Figure 1, showing the daily price movement of the Standard & Poor's 500 Index (a benchmark measure for overall U.S. stock market performance) from the year 2000 onward:
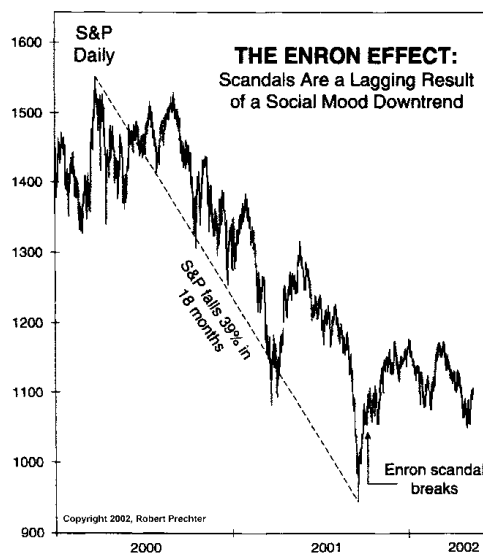

Figure 1 S&P 500 Index from 2000 to late 2002

The figure shows that in the 18 months preceding the Enron scandal, the market declined 39%. After the scandal broke in 2001, the market actually rose more than 10%—and

stayed up at those levels for nearly a year afterwards. So the actual facts of the matter fly completely in the face of the notion that the Enron collapse "spooked" the market; in point of fact, the flow of events ran in just the opposite direction. Here's what actually happened.

The declining market from January 2000 onward put enormous pressure on Enron's ability to use its high-flying stock price as leverage to secure loans to support the firm's accounting legerdemains. The decline of the stock price and the consequent drying up of the firm's lines of credit then led to the collapse of the company—and the subsequent scandal—when regulators and creditors began digging into the company's books. The increasingly negative social mood also whetted the public's appetite for scandal, recrimination, and punishment. A scapegoat was needed and Enron was the perfect candidate.

So contrary to the wisdom of the time, a more viable line of reasoning is that it was the negative social mood, as reflected in the dramatically falling stock market, that led to the Enron collapse, not the other way around. In this view, investors were not depressed at all as a result of the Enron collapse; rather, they were *already* depressed for the preceding 18 months as Figure 1 so graphically illustrates. In a very definite sense then, it was this negative tone in investor psychology that led to Enron's collapse. And if it had not been Enron it would have been some other firm employing similar magical accounting procedures—which indeed turned out to be the case, as witnessed by the subsequent bankruptcies of WorldCom, US Air, Delta Airlines, General Motors, and numerous other firms that couldn't quite get it together over the past several years.

2. Crowds, Moods, and Events

Taking a cue from the Enron case, our concern in this article will be with the actions and behaviors that stem from crowds, not individuals. As anyone who's had the misfortune to experience/witness the behavior of a crowd of hooligans at a football match or the actions of demonstrators in the streets of beleaguered urban ghettos, the psychology of masses operates under entirely different rules than those that apply to individuals. In short, the interaction among the individuals making up a crowd gives rise to *emergent* group behaviors that can differ radically from the behaviors displayed by any individual making up the group. In short, interactions matter—a lot! The two emergent properties of a crowd/population that concern us in this paper are what we might term the *"social mood"* of the population, how it feels about the future on all time scales, and the *collective events* that arise from, or at least are strongly biased, by this social mood. Let's look a bit more deeply at both these emergent properties of the group.

- *Social Mood:* We will take the mood of a population to be simply the collective feeling/belief the population holds about its future on all time scales. On a given time scales, say, a year, the social mood is positive if the population feels that things will be "better" one year from now than they are today; if they believe that things will be worse, then the social mood is negative on that time scale. So, in fact, there are actually several social moods, one for each time scale. This notion of time scale is important when it comes to regarding the social mood as a kind of leading indicator of collective events, as we now describe.
- *Collective Actions and Events:* A social event is one that arises from the collective behavior of the entire population. In other words, it is not the action of a single individual that gives rise to the event, but rather is the outcome of the collective decisions/actions taken by the population as a whole. For instance, the outcome of an election is a social event, while an airplane crash is not. Of course, there are many borderlines where one might argue that a particular individual action/event gives rise to what is perceived as a collective event. For example, in the Enron

situation described above an argument can be made that it was the actions of individuals like Enron president Kenneth Lay that led to the collapse of the firm's stock price, not the overall mood of the American population. The counterargument that we subscribe to here is that Lay's actions were a consequence of the overall mood of the time, and that pretty much the same outcome would have taken place even with someone other than Lay at the Enron helm. In short, Lay's actions were what philosophers term the "proximate" cause of Enron's demise. But the deeper force was the overall social mood of the population.

The importance of time scale comes into play when we recognize that collective events have a natural unfolding time characteristic of the nature of the event. For example, an event involving some aspect of popular culture such as the type of fashions that are in vogue or the sorts of books that are popular are short timescale phenomena, generally unfolding over a period of a few months to a year or so. On the other hand, a collective event like the shift in a dominant political ideology has a much longer unfolding time, normally several years to a decade or more. Finally, very slowly-unfolding events like the decline of a global power may take a century or more. So if we want to argue that the social mood of a population is a driving factor in the type of event we can expect to see, we must match the timescale of the event with the timescale of the social mood leading to the event. For example, it would give no insight into the likelihood of a country like the USA leaving the world's center stage to look at the social mood in the USA on a timescale of weeks or even months. That time scale is just much too short to see the unfolding of a long timescale event like the collapse of global political and moral power. Such an event would require examining the shift in social mood on a time scale of decades, not weeks or months. We will see several examples of this timescale issue later in the paper.

Our first order of business is to examine the connection, if any, linking the group's social mood M and the collective events E that arise from interactions among the people making up the group. Logically, there are four collectively exhaustive and mutually exclusive possibilities:

I. M and E are logically independent: In this case, M does not imply E or vice-versa. The two are totally independent of each other.
II. M and E are mutually dependent: In this situation M implies E and E implies M; there is a feedback loop from one to the other and vice-versa.
III. E implies M: Here an event impacts the social mood, but not vice-versa.
IV. M implies E: In this case, the social mood implies the social event, but not vice-versa.

Conventional wisdom argues that hypothesis II must necessarily be the case, and in fact, this is such a taken-for-granted background belief that it is almost never questioned. In this paper we argue that the fact that everyone believes this hypothesis doesn't necessarily make it true. After all, a few centuries ago everyone believed the Earth was flat too. But that universally-held belief did not make it so.

Notice what's involved here. The concept of logical implication is an all-or-nothing proposition: Either A implies B or it doesn't. There is no room for "sometimes". So either a feedback from E to M exists all the time or it doesn't exist at all. With this caveat in mind, the conventional hypothesis II says that collective events **always** impact the social mood, and vice-versa. Hypothesis IV, on the other hand, states that a feedback from events to mood is never present for any collective event.

The air-tight constraint of logical implication can be softened somewhat in the following way. We will certainly admit that in some cases there may actually be such a feedback from E to M—but it is not required. Its presence or absence depends on the interaction pattern of individuals composing the group; the timescale of the event and other factors

there is no room to discuss here. The point is that the feedback is very seldom present, and certainly not for *every* collective event. We will see examples later of cases when such a feedback is, in fact, totally absent. Thus, by Popper's "black swan" falsification criterion, these examples serve to invalidate hypothesis II. Here's another argument that points in the same direction.

The essence of the scientific method is to provide a systematic procedure for testing alternative hypotheses about how to best explain a given set of observations. An essential element in this procedure is Occam's Razor, which asserts that when faced with several hypotheses that account equally well for a given set of observations, preference should be given to the simplest of the candidates. Oddly enough, the default hypothesis II above, which is the one almost everyone believes, is actually the most complex/complicated of the four candidates, not the simplest! So for this reason, to accept hypothesis II it must do a better job of accounting for the observations. Not equally just well, but *better*, in order to be the hypothesis of choice. In this paper, we present the argument that hypothesis IV explains the observations at least as well as II and is simpler.

As a short aside, it's interesting to ponder why hypothesis II is so universally accepted. My feeling is that this universal belief in a very dicey proposition stems from a completely unjustified generalization from individual beliefs to the beliefs of a group. In other words, if I feel this way and everyone I know feels this way, then the group consisting of me and my friends must necessarily feel that way too. As noted above, this is a totally false generalization. A group can and often does feel and behave completely differently than any of its constituent members, viz., a group of rabid football fans. The root cause of this discrepancy between individual and group behavior is the network of interactions linking members of a group. This network gives rise to the emergent properties of group psychology and behavior, properties that cannot be seen by examining any individual making up the group.

At this point, you might ask: What's the harm in adopting hypothesis II? After all, we've just conceded that feedback from events to mood does *sometimes* exist. So why not take the more complex hypothesis and cover all bases? The answer is that there is no harm in doing that other than you then move the question out of the realm of logical implication into the domain of likelihood and probabilities. In other words, you're now asking whether the feedback loop is present "most of the time" or "some of the time" or "almost never". Without an analysis of the issue from an exhaustive database of examples, it's difficult to give an unambiguous answer to this question. On the basis of the investigations I've seen to date, the feedback is almost always absent. The only exceptions are the sort of kneejerk reactions that financial markets show in the immediate aftershock of a dramatic event like 9/11 or the London Underground bombing in 2005. But studies of these and similar events show that the impact on the social mood (i.e., the market averages) dissipates very quickly, sometimes in just a couple of hours or less. More about this type of situation can be found in [1]. So for now, we stand by the argument that hypothesis IV is the best choice among the four candidate hypotheses.

In order to test any of the foregoing hypotheses, we need to have some way of measuring the social mood at any given instant and on all time scales so that we can correlate changes in mood with different types of events. Now we take up this question of measurement.

3. Moods, Measures and "Sociometers"

In the Enron case that opened this paper, we have tacitly assumed that the social mood was to be measured by a stock market index, the S&P500. This is not by accident. While there are many other possibilities for a "sociometer" to measure a group's mood, such as

public-opinion surveys and questionnaires, the analysis presented in [1] concludes that no candidate measure of mood possesses all the desirable qualities of a stock index. Basically, the argument supporting a market index as a measure of social mood is that when an investor or speculator takes out a position in a stock, they are making a bet on the future on a particular time scale. The market collects all these bets and synthesizes them into a single number: a change of price. If there are more negative bets about the future of the stock, the price declines, more positive bets it rises.

At first hearing, many people argue that a stock index cannot reflect the mood of a population since only a minuscule fraction of a population is actively engaged in the actions of buying and selling stock that give rise to price movements in an index like the S&P500 or the Dow Jones Industrial Average (DJIA). Therefore, a stock index cannot possibly account for the mood of an entire population. Shifted into the realm of physics, this line of argument is like saying that the thermometer on the wall of my office cannot possibly measure the overall temperature in the room because it doesn't take into account the behavior of every single air molecule. Of course, we know from the theory of statistical thermodynamics that knowing the behavior of a small fraction of the molecules is sufficient to extrapolate the behavior of the entire group since "all molecules are created equal" and they all obey the same rules of particle motion.

In the case of human populations, the objects in interaction (people) are not homogeneous; they are heterogeneous. Moreover, they do not all use the same rules to form their beliefs and actions. But rather than making the argument against using a stock index to measure social mood, these facts actually make the case easier.

First of all, stock traders do not exist in isolation from the rest of society. Traders read newspapers, watch TV, talk with their friends and families and, in general, exist as part of a rich social network. Their actions are influenced by that signals they receive from that network. So it is not the case that the thoughts and feelings of a broad part of the population is not reflected in a stock index.

Moreover, unlike the molecules of air in my office, not everyone in the population is created equal. Some people just have a greater ability to influence others by their words and actions. And such people tend to be those who are engaged in stock markets, either directly as traders or as investors and speculators. So again the market index reflects the beliefs about the future of a disproportionate fraction of the influential members of a population.

Of course, what we would really like is to be able to measure the collective mood of the population directly, not via a surrogate like a market index or a questionnaire. Recent work in this direction is reported in [2], where investigators analyzed a large database of Twitter feeds. The analysis focused on categorizing the messages into positive and negative bins according to the psychological tone of the message as indicated by emotionally-charged words. Words like "friendly" and "active" went into the positive category, while messages containing words like "on edge" and "panicky" were placed in the negative. The overall mood was then measured along six dimensions: calmness, alertness, sureness, vitality, kindness and happiness. It turned out that one emotion, calmness, served very well as a leading indicator for what stocks would be doing three or four days in advance.

This study lends support to the notion that a stock market index reflects overall social mood, since the Twitter analysis is similar to a "survey" of the mood of the population, which the study shows is strongly correlated with what the stock market will be doing a few days in the future. So for the remainder of this paper, we will employ a stock market index as our measure of social mood. Before proceeding to a discussion of the overall research plan for socionomics (a termed coined by financial analyst and social theorist

Robert Prechter in [3]), let's look at a few everyday examples to get into the spirit of things.

4. Socionomics in Action

This section presents several examples illustrating the way social mood biases events in all aspects of life, ranging from the construction of skyscrapers to trends in women's fashion to the outcome of US presidential elections. The examples involve events unfolding over very different time scales and that address very different aspects of social life.

4.1. Skyscrapers and Social Mood

Psychologists have observed for a long time that human beings, particularly men who are noticably shorter than average; develop personality traits like assertiveness, loud voices, and bustling, take-charge behavior in order to ensure that others notice them. We see the same phenomenon at work at the level of countries. And what better—and cheaper— way to proclaim to the world "We're here!" than to build the world's tallest building? Basically, such a tower is a monument to a society's belief that their future will be just like today—only brighter. So instead of building something that fits the social needs of today, they build something that attests to their vision of tomorrow that rises onward and upward, presumably forever.

But trend following can be a tricky business, as the chart in Figure 2 dramatically illustrates. Here we see the Petronas Towers, Taipei 101, and Burj Dubai, each of which was the world's tallest building at the time of its completion.

As a measure of the changing level of optimism for the future in each country, the figure also shows the local stock exchange index. In each chart, arrows indicate when construction of the local monolith began and when it was completed (except Burj Dubai, which is scheduled to be "topped out" in early 2010, and now renamed Burj Khalifa to honor the leader of Abu Dhabi, who bailed out the fast-sinking Dubai economy in December 2009).

History has shown an eerie correlation between tallest-building initiatives and financial debacles. It seems the urge for architectural monuments to human hubris is about as reliable an indicator as you can find for financial trouble. Economist Mark Thornton states that skyscrapers tell us a lot about a country's technological capabilities, ambition, economic wealth and need to project itself on to the world stage. He says, "[It's] these features that make skyscrapers, especially the construction of the world's tallest building, a salient marker of 20th-century business cycles."

As noted by Peter Kendall in 2006, in each of the three cases shown in Figure 2 a funny thing happened on the way to the top. At the time construction began on each of the buildings shown, people's optimism for the future knew no bounds and the social mood meter, the local stock index, was soaring off into outer space. But skyscrapers aren't built overnight. And without exception by the time the building was completed the index was lower than snake hips, indicating that the local citizenry was deeply pessimistic about the future. While I don't have space here to show this story for earlier efforts like New York City's Empire State Building in the 1930s, I hope the reader will take my word for it that the very same phenomenon was at work there too.

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Figure 2 Skyscrapers with Local Stock Indexes (Adapted with permission from the *Elliott Wave Financial Forecast, April 2006*.)

The basic message is that when a society is optimistic about the future and is trying to get recognition on the world stage, an easy way to broadcast their "We've-arrived" message is to build the world's tallest building. But by the time that building is complete, the population has undergone a sea change in its beliefs about the future and the national mood has sunk back to a level far below where it was when construction began.

4.2. Skirt Lengths and Social Mood

In the 1960s, Wall Street trader Ralph Rotnem proposed something he called *The Skirt Length Indicator*. It goes like this. If the fashion trend of the day is calling for shorter skirts and dresses, that signifies the economy is booming and the good times roll. But if skirt lengths are heading south, so is the economy. Common sense would argue that when people are optimistic about the future, fashion designers want their creations to reflect that optimism. And one way to do that is to have those elegant ladies with long legs show a bit more of their leggy assets. In the other direction, when we're fearful of the future instead of welcoming it conservatism reigns supreme, and designers reflect this mood by lowering the hemlines. Of course, fashion trends change on an almost daily basis and this kind of economic indicator (if it really is an indicator) is subject to very short-term fluctuations measured by the spring and fall showings in the fashion houses of Milan, Paris, and New York.

But how does the yo-yo-ing of skirt lengths match up to our measure of social mood, the financial market averages? The tale of this particular tape is shown in Figure 3, which displays skirt lengths versus the DJIA over the period 1920–2000.

We might add that it's not just skirt length that's correlated with social mood. It's color, too. In times of negative mood, fashionable colors turn distinctly bleaker tending toward dark, somber browns and black. When the mood waxes positive again, bright, cheery colors like yellow, light blue, turquoise and the like move to the fore.
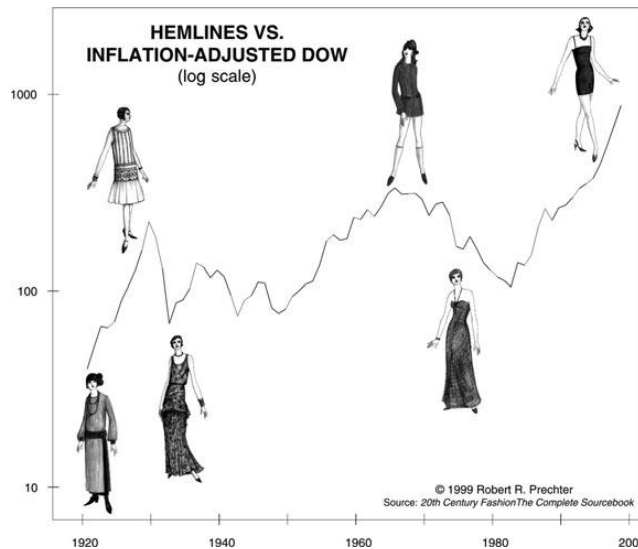

Figure 3 The Skirt Length Indicator, 1920−2000

4.3. U.S. Presidential Elections and Social Mood

Conventional wisdom has it that political trends are a key determinant of the stock market's gyrations. As an election approaches, commentators endlessly debate the effect the outcome of the election will have on stock prices. Investors weigh up which candidates will influence the market to move up or down. Statements like "If Jones is elected, it will be good for the market, but Smith's election will cause stocks to tank" are common.

If this causal relationship were even approximately correct, there would be evidence that a transfer of power from one party's leader to another affects the social mood, hence, the stock market, in some very specific ways. There would also be evidence that certain political parties or policies reliably produce bull or bear markets. There is no study showing any such connections or correlations. On the other hand, it's not hard to see just the opposite at work.

A strong and persistent trend in the stock market dramatically biases whether an incumbent president or the incumbent's party will be re-elected in a landslide or defeated in one. In all cases where an incumbent remained in office in a landslide, the stock market's trend was up at the time of the election. In all cases where an incumbent lost in a landslide, the stock market's trend was down—as it was prior to the 2008 election that swept Mr. Obama into the White House.

Again using the stock market index as a surrogate for how the American citizenry rates the future, we find that there is not a single case in which an incumbent was re-elected despite a deeply falling stock market or was defeated in a landslide despite a strongly rising market. Figure 4 shows the overall situation through the 1998 election. Here we see that if the mood of the populace is positive just prior to the election, the incumbent or his party are always returned to the White House; if not, they are thrown out.
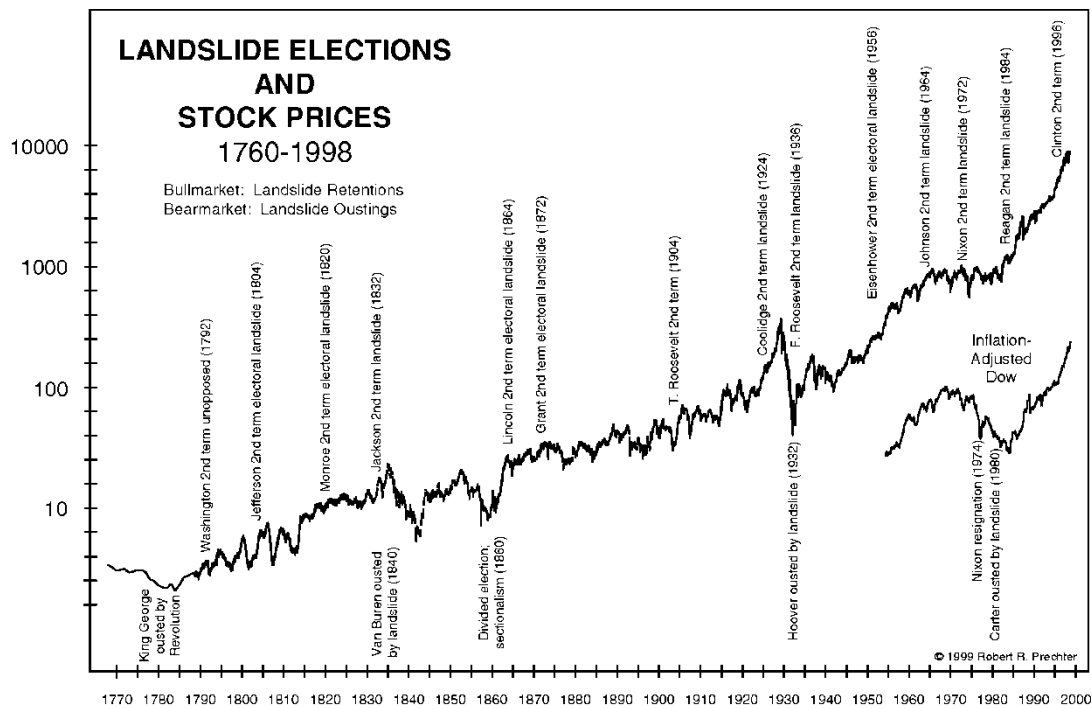
Figure 4 U.S. Presidential Elections vs the DJIA, 1760-1998

Let's summarize where we are at the moment before proceeding to a more detailed study of social mood and its impact on large-scale global events.

5. The Central Hypothesis of Socionomics

We can compactly summarize the basic idea of socionomics in what we will term the *Central Hypothesis of Socionomics,* which is expressed in the diagram below. It shows the components of the socionomics argument that we've presented in the examples above.

THE CENTRAL HYPOTHESIS OF SOCIONOMICS

Herding Instinct → Social Mood (beliefs/feelings) → Social Behavior

and Collective Events

This flow from individual herding instincts through to collective social actions and events via the medium of social mood has been the focus of a series of books and articles by financial guru and social theorist Robert Prechter [3]. By design, the terminology *socionomics* introduced by Prechter differs from the word *socioeconomics*, an academic field that mixes sociology and economics. Although the two areas of study both center about issues involving social behavior and economics, digging a bit deeper into both one finds that the two lines of thought have at most a very tenuous relationship. So whenever the term *socionomics* appears, the reader should remain alert to this distinction between the two fields of study.

An important caveat: The arrow from Herding Instinct to Social Mood and the one from Social Mood to Behaviors/Events does not mean that the first *causes* the second. The reader should interpret these arrows as shorthand for words like *predisposes, impacts*, or *biases*, each of which conveys much better the meaning I have in mind. Thus, the

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prevailing social mood creates a bias for social events that are more or less likely to occur. As Prechter puts it, "Social mood is responsible for the character of social action." But it doesn't necessarily *cause* those actions.

There are several aspects to this diagram that call for attention in order to completely understand its message, including the role of time lags from one part to another, how to actually measure the social mood (which we've only briefly touched upon above), how to use socionomics to anticipate social events and the like. But as there is no room to elaborate these matters here, the reader is referred to [1] for a detailed discussion of these and other related matters. But this is an excellent juncture to revisit the idea of "event causality", the notion that there is necessarily a meaningful feedback from events to social mood. As discussed above, the simplest hypothesis is that there is no such feedback, at all. So let's try to lay this notion to rest once and for all by the expedient of counterexamples.

Consider a blockbuster, literally knockdown, event like the 9/11 attack that took out the Twin Towers or a presidential assassination. Chances are you'd say to me, "Surely, an event like that would affect your mood." Well, maybe it would affect my immediate *emotional* state (and maybe not). But after years of careful study, Robert Prechter has found that even as a secondary influence the net effect of such events is zero. There is not a shred of evidence (read: data) to suggest that such an event affects the mood of the population as a whole, at all.

Let's illustrate this with an actual example, one of the most dramatic single events of the twentieth century: the assassination of President John F. Kennedy in Dallas on November 22, 1963. As stated earlier, I'll invoke the standing assumption that the social mood is measured by the Dow Jones Industrial Average (DJIA). Figure 5 below shows the monthly DJIA over a period that includes November 1963. Now if the social mood (the DJIA) were indeed impacted by that dramatic assassination event, one would expect to see a pronounced dip, or at least change, in the DJIA around that month. Can you pick out November 1963 on this chart? I won't keep you in suspense. Figure 6 shows the same chart with November 1963 marked with an arrow. The point here, of course, is that November 1963 is indistinguishable from the months on either side of it. In short, when it comes to affecting social mood, events don't matter—much!
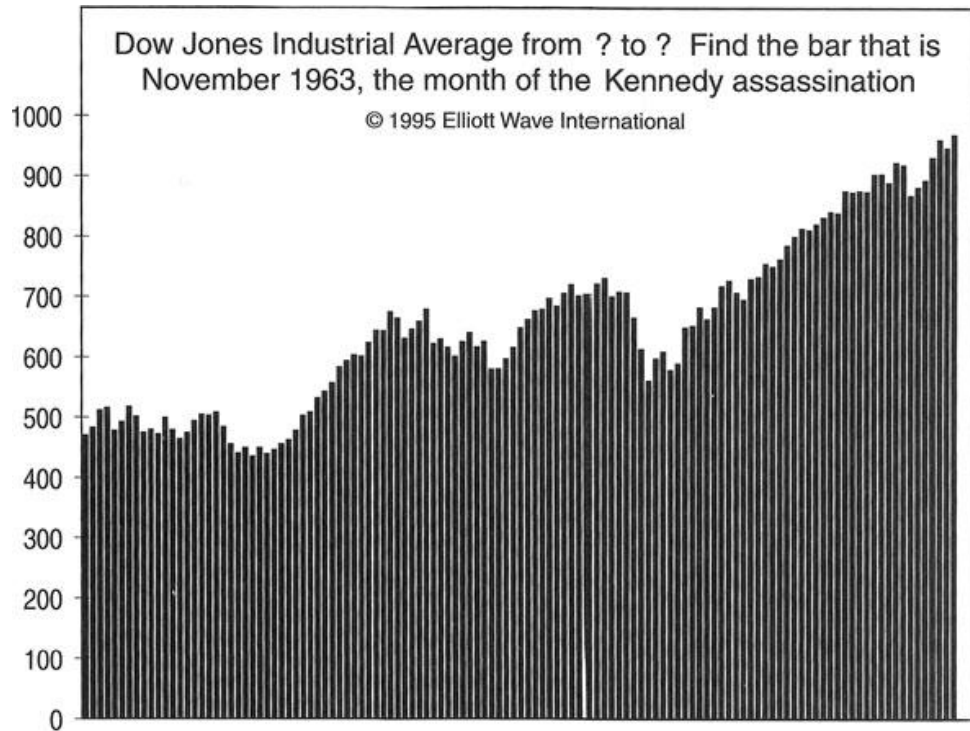
Figure 5 The Dow Jones Industrial Average in a Period Including November 1963

I have shown you only the monthly average and not changes on a shorter timescale. It actually does seem to be the case that there is a kind of "shock factor" at work for such world-shattering events like the Kennedy assassination, and the mood (read: the DJIA) does move in the immediate aftermath of such an event. Presumably, this is a knee-jerk response to the fear and uncertainty that people feel when something out-of-the-blue like the 9/11 attack takes place. But if I had shown you a minute-by-minute chart, what you would have seen is an almost immediate return to "normal" (i.e., the mood prior to the event) within a few minutes or, at the latest, a few hours of the shock.

So the only kind of feedback the data supports is an ultra short-term emotional reaction to the surprise factor of the event. And as the Kennedy assassination illustrates, even for an event with a huge surprise factor like this, the shock-based movement in the social mood very rapidly fades.
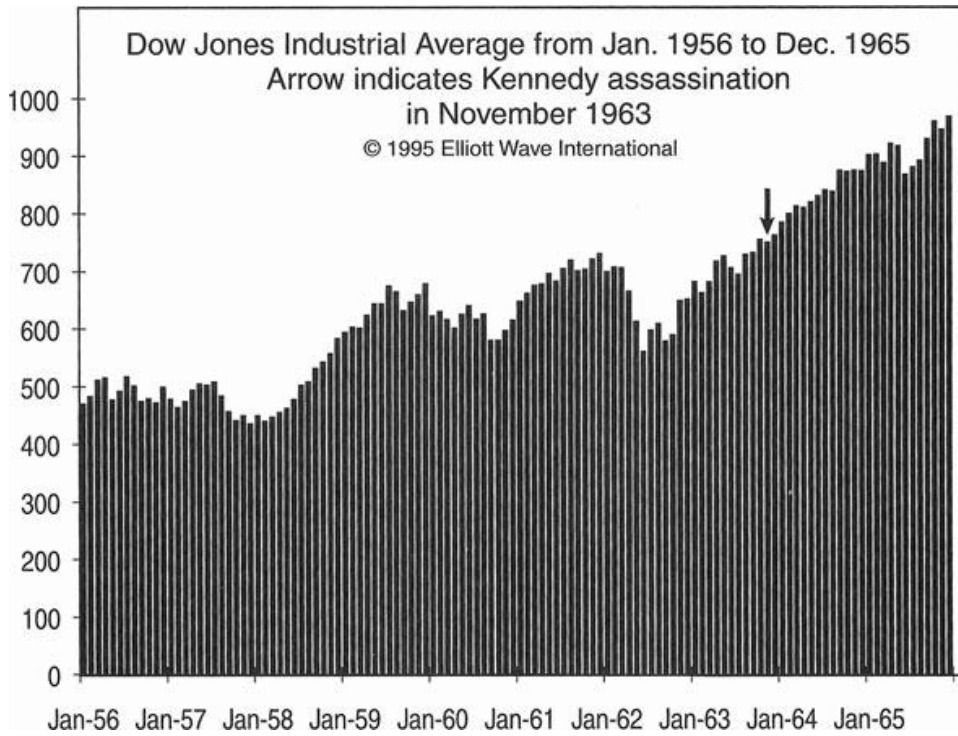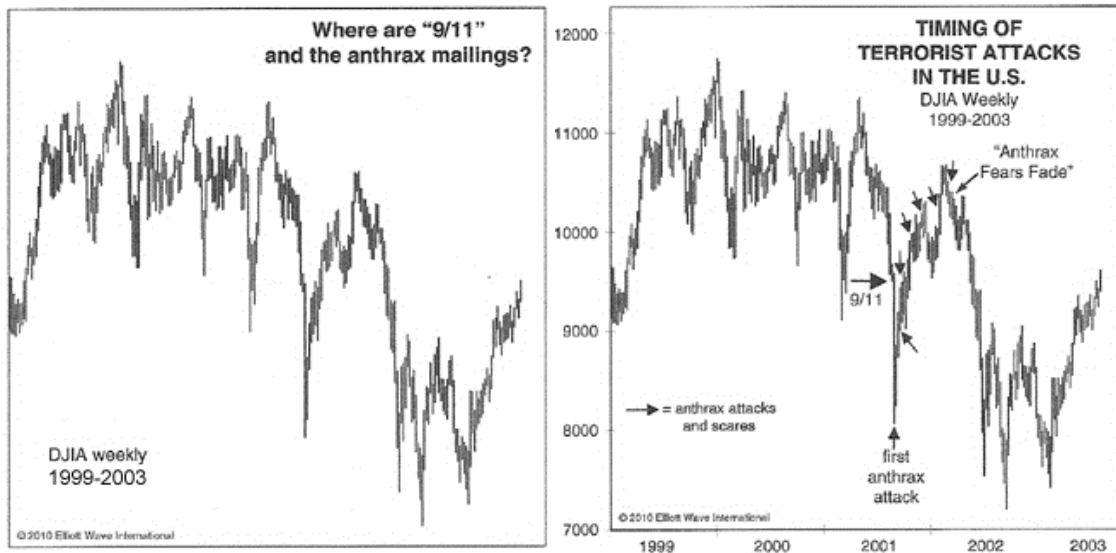
Figure 6 The Dow Jones Industrial Average with November 1963 Marked with an *Arrow*

Just in case you might be thinking that the Kennedy assassination is an isolated singularity in regard to the impact on social mood of dramatic events, here is another example in the same vein. Figure 7a shows the social mood meter, the DJIA, over the period 1999-2003 on a monthly scale.

(a)   (b)

Figure 7 (a) DJIA Weekly, 1999-2003, with (b) Arrows Marking Major Events

During this period, the US saw the September 11, 2001 attack on the World Trade Center, as well as several mailings of anthrax to members of Congress and other luminaries. Can you identify the timing of these events? Figure 7b shows arrows when these events occurred.

These graphics illustrate the remarks made earlier that aside from a momentary "knee-jerk" effect immediately following the shock of the event, there is no readily recognizable effect of the event on the subsequent social mood, at all. Hopefully, these examples, and there are many, many more, serve to quash the idea of event causality, once and for all.

Now we move on to a consideration of how social mood impacts political, economic and social events at the national level in a variety of very different countries.

6. The Fate of Nations

Earlier, we showed examples of social mood as the biasing factor in relatively short-term events in popular culture and politics. But the principles apply for much longer-term events, as well. In this section we illustrate this by an account of how the mood of a population influences the trend of events at the level of entire countries over periods of time measured in decades.

6.1. Brazil

A few years ago as I was just beginning to get into the spirit of the ideas outlined in this book, I was invited to give a series of lectures on complex system theory at the National Supercomputer Laboratory in Petropolis, Brazil, a lovely Germanic-style town in the mountains outside Rio. At the time, I was grappling with the ideas just outlined for using a stock market index as a sociometer to measure the mood of a population. But all the examples I had at hand involved the US stock market. I began wondering whether perhaps the notion of the DJIA as a measure of social mood was something peculiarly American and did not transcend national and cultural boundaries. So I decided to test this possibility using my audience in Brazil.

The basic idea of the test was primitive in the extreme. Before going to Brazil I looked up the monthly averages of the Bovespa Index, the measure of the main Brazilian stock market in Sao Paulo, and plotted it over the period 1992–2006. I then asked my Brazilian friends to tell me what they thought were the most significant social, political, and economic events that took place in Brazil over this period. Peter Kendall at Elliott Wave International was then kind enough to clean up the data and prepare the chart in Figure 8, which displays these pivotal events marked on the chart of the Bovespa Index.

The story told by this graphic is compelling. Whenever the social mood in Brazil turned negative, bad things like a currency devaluation, a bank failure, or a presidential impeachment were the *plat du jour*. On the other hand, when the Brazilian mood swung upward and people were looking forward to the future, economic recovery, election of a populist president, and the profitable sale of productive government assets dominated the headlines.

When I visited Petropolis and gave this presentation, it was shortly after the "surprise" election of Lulu DaSilva as Brazil's first socialist president. At the time of that landslide victory in 2002, da Silva had not been taken very seriously as a candidate by the pundits and other talking heads in the Brazilian media. But to one sensitized as to how social mood impacts a collective event like a presidential election, his victory should have been no surprise. As the chart shows, at the time of the election the social mood in Brazil was at a low not seen in more than a decade. Under such circumstances the electorate almost

always kicks out the incumbent, just as we saw earlier for US presidential elections. And so it was in Brazil, as well.

6.2. BRICs or Bric-a-Brac?

In early 2007 the *Asia Times* noted, the coining of BRIC was a boon for the emerging markets. The snappy acronym summed up the macroeconomic forces that were reshaping the planet. The acronym sparked myriad new investment funds and trading strategies, boosting capital flows into the emerging markets and trading commissions for investment banks.

Figure 8 The Bovespa Index and Major Events in Brazil, 1992–2006

Boy did it ever! Between May and September 2008, BRIC stocks sank more than 70% from their peak. And this was in the face of media statements that the BRICs will display "a resilience unimaginable in the U.S." If you believe that, you'll believe in the tooth fairy too. Figure 9 shows the situation with the BRICs just a few weeks later.

As if this sentiment wasn't rosy enough to emit the heat needed to warm up the BRICs, the head of one major investment firm stated, "I would expect the big emerging markets to do really well in the updraft of the next bull market, which you ought to be positioned for right now," a statement made in early 2009. So where do things stand today in the biggest BRIC of all, China? The picture as I write is shown in Figure 10.
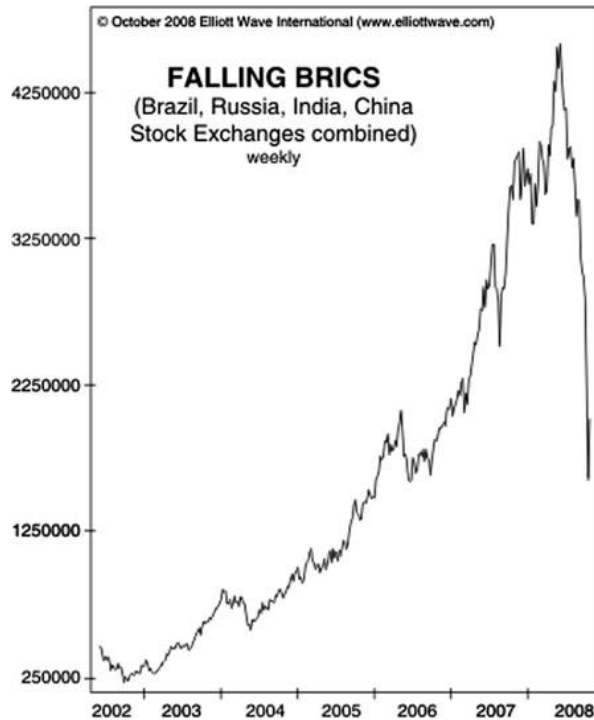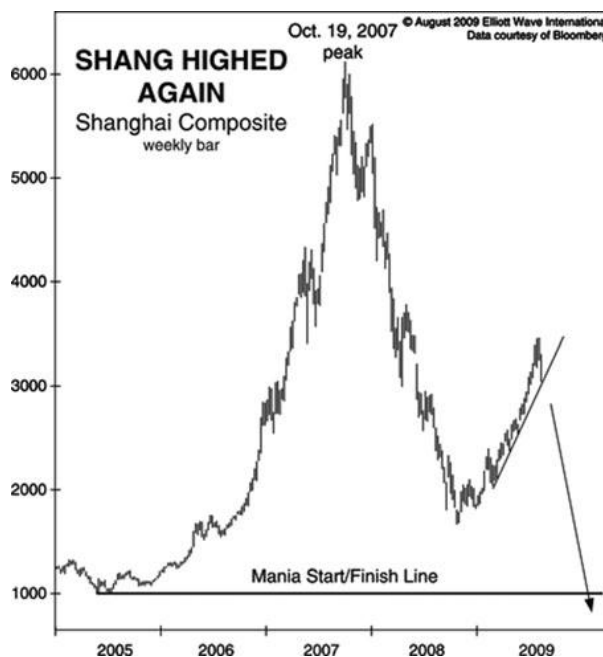

Figure 9 The BRICs, thru October 2008

Figure 10 The Shanghai Index thru August 2009

The Shanghai Exchange had the same run up as most other markets from late 2008, but as with the rest of the world it's in the final stages of that bear-market rally, destined

ultimately to drop down below the "starting line" of the big surge upward. So maybe bric-a-brac is a more suitable term for these emerging markets, after all.

6.3. Turkey

When Eyup Cetin asked me to prepare this article, I immediately thought of doing a Brazil-style analysis of major events in Turkey over the past twenty years or so to get a feel for where Turkey stands today in the general scheme of things. Of course, the sociometer for such a study must be one that measures the overall social mood in Turkey, not Brazil, China, the USA or any other place. Fortunately, there is a lively stock exchange in Istanbul which is measured by the XU100 Index. Figure 11 shows this index for the period 1989-2010. I've added a list of some milestone social events that have taken place since the late 1990s to this chart. I leave it to my Turkish readers to draw their own conclusions from this graphic as to where Turkey may be going over the coming years.

Figure 11 The XU100 Index and Turkish Events, 1989-2010

7. The Futurscape

Speaking one time about making predictions, the legendary Danish quantum physicist Niels Bohr said, "It's very difficult to predict—especially about the future." This was from a man who had a horseshoe hanging over the door to his house because, as he told a friend who wondered whether Bohr really believed such a charm brings luck, "They say it works even if you don't believe in it." The same might be said of our social-mood-based ideas to explain the development of trends, and even in some cases specific events. It seems to work—even if you don't believe in it!

Looking at indicators of social mood in the early 1980s, Robert Prechter saw historical levels of pessimism and a pattern in the stock market, which led him to anticipate a shift to a more positive mood with consequences that would specifically include, among other

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things, an economic boom and no international war for at least 10 years. Examining indicators of social mood in the 1990s and early 2000s, he noted the extreme levels and duration of optimism. Under these circumstances one might expect a shift to a more negative mood, with all its attendant consequences. Timing and extent would depend upon the specifics of price patterns and their degree (timescale), along with the probabilistic nature of conclusions to be drawn from them. And every day brings new information. The socionomist wishing to anticipate social events needs to be alert to new information and flexible enough to accommodate it. (Un)fortunately, doing so in a consistent manner is a daunting task.

Our leitmotiv in this section will be to recognize that the progression from a positive social mood to a negative one is a movement from one polarity to another. We can label these polarities with everyday English words appropriate for the particular type of social trend or event we are focusing upon. So, for instance, if our concern were with the future of the automotive industry, a firm like Ford or BMW might be thought of as *adventurous* or *outwardlooking* in times of rising social mood as they try to expand their markets to other products and/or territories. On the other hand, as the mood turns negative we might see a situation in which these firms become *protectionist*, seeking to preserve whatever market they already have against real or perceived "poachers." So the two terms—adventurous/protectionist—represent polar opposites associated with strong positive or negative social moods. Table 1 gives several more such polarities.

Table 1 Polarities of Positive (+) and Negative (−) Social Moods

Positive mood (+)	Negative mood (−)
Unifying	Divisive
Liberating	Restricting
Adventurous	Protectionist
Togetherness	Separation
Supportive	Opposing
Open	Closed
Happy	Sad
Hard-working	Lazy
Manic	Depressive
Tolerant	Bigoted/xenophobic

As we move from positive to negative mood, we move from a state of optimism and looking forward to a brighter future to pessimism and a future we fear. This psychological disposition in a population has deep implications for the relative likelihood of societal events of every sort taking place. The implications we draw from this, however, should all be taken with several pinches of salt for the reasons we've already discussed. The more specific the type of event we're focusing upon, the less likely it is to occur as forecast, at least in fine-grained detail. But what is likely is that an event from the same "family" of events is more likely to occur than something from a very different family.

We also noted before that our Central Hypothesis involves social events unfolding on very different timescales. So the assessment of whether the social mood is positive or negative depends on what timescale we're talking about for the development of a particular type of event. It can easily be the case that the mood lies on the positive side of the foregoing chart for, say, a short-term event like a developing trend in tastes in popular films, while being very negative indeed for longer-term events like peace, or at least the cessation of hostilities finally coming to the Middle East. Wars do not break out in hours or days; they take weeks and months or even years to actually unfold. Similarly, a change in popular taste in music does not reveal itself over centuries; it is a

phenomenon whose natural timescale is measured in weeks to at most a few months. So in evaluating a question about the likelihood of a future event, you should first ask yourself, "What is the natural timescale for the event in question?" At that point you can go to the chart of the DJIA or another financial index perhaps more relevant to the event in question to use as your sociometer, examining it on the relevant timescale for the event in order to evaluate whether the mood is rising or falling. This information, together with the polarities of Table 1, as well as any other supporting information you have, such as media reports, personal observations, and the like, constitutes the raw material from which to formulate your answer to the question. Let's now try to apply these principles to events to short-, intermediate- and long-term questions.

7.1. Popular Fashions Redux (Short Timescale)

Earlier, we discussed the Skirt-Length Indicator as a consequence of social mood, and showed in Figure 3 the way what was "in" and what was "out" varied with mood over the period 1920-2000. An interesting question for both fashion-conscious women and designers is, What about after 2000? In particular, Where do things stand today and where are they going tomorrow?

First of all, the period 2000-2010 was one in which the social mood began with a bang and ended with a whimper. But the whimper is an ambivalent one, being an upswing from spring 2009 to the present in what some believe is a counter-trend bounce that will soon return to the negative period that began in late 2007. Figure 12 illustrating the fall fashions shows this ambivalence. On the one hand, the skirts are long which is consistent with a negative mood; on the other hand, the see-through skirts suggest the positive mood tendency to show some leg.
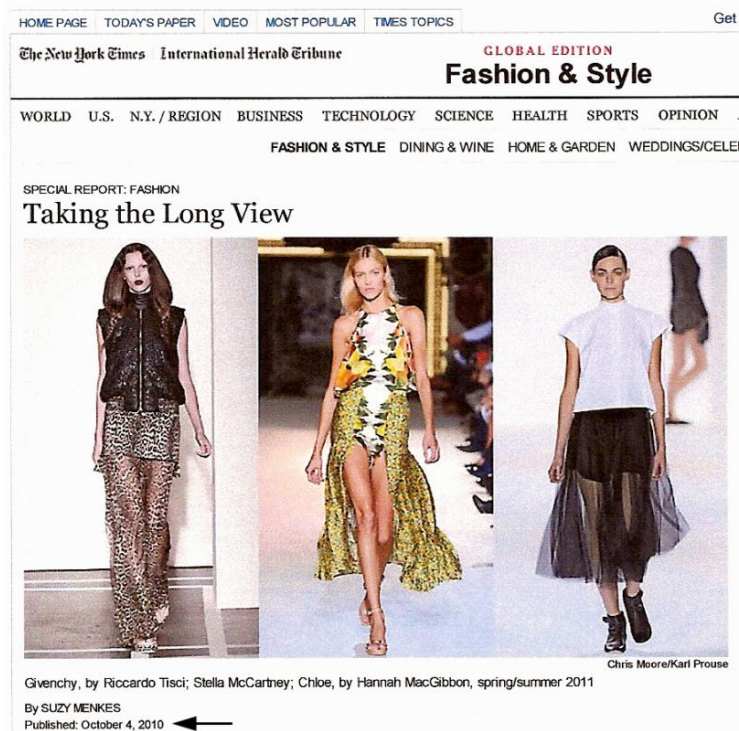

Figure 12 Skirt Fashions, October 2010

In another statement about fashion released at the end of 2010, the paint manufacturer DuPont said that the most popular car color in the USA was silver, another clear sign of the ambivalence of social mood in the American population. Equally interesting is that the

second- and third-place colors were black, followed by white and grey (tied), adding even more ambivalence to the overall picture. Shifting to European preferences, the dominant color was black supporting the somewhat darker view in Europe about the future than in the USA. Finally, in South America silver captured the top spot, while in Asia light neutral colors lead in popularity just as one might have expected with the rise in mood in Asia in contrast to the decline in North America and Europe.

7.2. Regulatory Ups and Downs (Medium Timescale)

Now we turn to a matter dear to the hearts of just about every investor nowadays in the aftermath of the biggest financial crisis since the 1930s. We'll walk the legislative side of the street and look at the way legislators continually shift their stance on how to best regulate the financial services industry in order to protect" the small investor.

In their typical self-serving fashion, legislators pander to the mood of the public in almost every action they take. There's no area in which that is more evident than in the so-called "protective" legislation enacted to salve the wounds of investors wiped out by the flow of the market and/or by rapacious investment "advisors." Given the predilection of mom-and-pop investors to believe that those who succeed in the market when they themselves fail must be doing it by chicanery and corrupt business practices, legislators necessarily acknowledge these sentiments by passing punitive laws giving the surface appearance of protecting small investors from such predators. On the other hand, when even the corner shoeshine boy is serving up hot tips on the markets no one wants to be restricted in what they can do. In such bull market periods, legislators, sensitive as always to where the votes are, repeal and/or rewrite previous legislation to free the hands of the investment community.

Tracing the ebb and flow of such legislation, economists John Nofsinger and Kenneth Kim [XX], expanding on earlier work of Peter Kendall and Robert Prechter, identified a number of important laws designed to protect investors. The dates of these laws, their purpose, and most interestingly what was going on in the world of finance shortly before the law was passed are shown in Figure 13. What immediately strikes the eye in this chart is that after each period of scandals and negative social mood, Congress immediately stepped-in to take visible action to punish in some way the perceived transgressors. In fact, investor protection legislation was enacted after every one of themajor market declines in the twentieth century! As any decent socionomist would expect, these very same laws get weakened, if not repealed all together, when the social winds start blowing in the opposite direction. Figure 14 gives the story.

The point to emphasize here is that the security protection laws are passed to protect investors. This almost always happens when people become angry and frightened over scandals and precipitous declines in their portfolios. But when the good times roll, congressmen are pushed to lighten-up on legislation and let companies (and investors) do what they feel they need to do in order to rake-in more profits. As often as not, however, this "lightening up" turns a bull market into a full-fledged bubble of the sort we're now sorting out with its likely end being not a whimper but a bang (implosion, actually). More scandals then ensue, more investors get angry and scared, and the whole process repeats itself as is evident from Nofsinger and Kim's study.

Act	Purpose	Preceded By
1933 and 1934 Banking Act and Securities Exchange Act	Separates commercial and investment banking, creates SEC as market regulators	Stock market crash of 1929 and ensuing bear market removes nearly 90% of Dow value
1940 Investment Company Act and Investment Advisors Act	Regulates investment companies and advisors	Market decline of 25% from October 1939 to May 1940
1970 Securities Investor Protection Act	Creates Securities Investor Protection Corporation and insurance from broker defaults	Market decline of 30% from April 1969 to June 1970
1974 Employee Retirement Income Security Act	Regulates pension funds	Long bear market from December 1972 to September 1974 takes the Dow down 40%
1988 Insider Trading and Securities Fraud Enforcement Act	Increases penalties and liabilities for insider trading and fraudulent activities	Stock market crash of 1987 takes Dow down over 40%
2002 Public Company Accounting Reform and Investor Protection Act	Increases regulation of auditors, lengthens punishment for white collar crimes, and creates more corporate fraud laws	2½ year bear market reduced Dow by 35%, Nasdaq declines 75%

Figure 13 Legislation Passed to Protect Investors

Action	Purpose	Preceded By
1927 Government agency policy allowing commercial banks to issue securities	Allows commercial banks into investment banking activities	Stock market rose over 200% from 1925 to 1928
1995 Private Securities Litigation Reform Act	Limits the ability and available damages of investors suing for corporate fraud	Dow increased 60% between 1993 and 1995
1998 Securities Litigation Uniform Standards Act	Precludes plaintiffs from bringing securities actions in state courts	Dow increased 125% from 1996 to 1999
1999 Financial Services Modernization Act	Allows the combining of commercial and investment banking activities	Dow increased 125% from 1996 to 1999

Figure 14 Laws Passed to Repeal Investor Protection

As a fitting close to this story of investor protection and government regulation of Wall Street, it's worth noting a remark by Alan Greenspan made in an interview given to the *Financial Times* in July 2008:

> The cause of our economic despair, however, is human nature's propensity to sway from fear to euphoria and back, a condition that no economic paradigm has proved capable of suppressing without severe hardship. Regulation, the alleged effective solution to today's crisis, has never been able to eliminate history's crises.

When it comes to long timescale processes, nothing takes a backseat to war and the grab for territory at the nation-state level. So we conclude our story with an account of one of the longest-lasting struggles of this type, the still ongoing Arab-Israeli conflict.

7.3. The Middle East Crisis (Long Timescale)

Tension in the Middle East is a bellwether rift that has an almost perfect record of erupting into open hostility right at the onset of major downturns in social mood.

Figure 15 shows that virtually every major change in social mood was presaged by either the eruption of active hostilities in the Middle East or by a period of easing of tension and hopes for a better, or at least more peaceful, future. (Note: On the chart, the vertical scale is the DJIA adjusted for inflation via the consumer price index.)

Figure 15 Ups and Downs in the Middle East, 1925–2000

A couple of points on this diagram are of special interest. We see that the longest period of goodwill and cooperation between the warring factions was a Middle East *Era of Good Feelings*, which ran from September 1993 through January 11, 2000—**3 days** before a major high in the DJIA. By the summer of 2000 tensions were rising, as the Palestinians threatened to declare statehood. As the social mood declined through the fall of 2000, riots were commonplace and Yassir Arafat's popularity underwent a major shift upward. By May 2001 newspaper headlines were asking, "Is It War Yet?" and Israel employed US warplanes against the Palestinians for the first time since the 1967 war. As stock prices were in a downturn in September 2001 that would only reverse one year later in October 2002, it would certainly be consistent with the idea of a major war breaking out after a trend change in social mood. So where do we stand today on the prospects for the Middle East during the next few years?

Recall the general principle operating here: good things tend to happen in the Middle East when the mood is positive, bad things when it's negative. But now let's get a bit closer to the action and look not at the US Dow Jones Industrial Index but at the index of the Israeli stock market in Tel Aviv. Figure 16 shows this index over the entire history of the state of Israel, together with several of the major political and military events in that period.

In general, the pattern of positive mood/nice events was borne out during this period with a few nontrivial exceptions marked in grey. These exceptions underscore the fact noted earlier that social mood is not a 100% sure-fire indicator of what will or will not

happen. It only sets the tone for what is *more likely* to occur than not. This graphic illustrates that maxim in spades. It also strongly suggests that if the Israeli social mood is indeed flattening out as it appears in this chart, we could be in for some "interesting" times in the Middle East over the next several years.
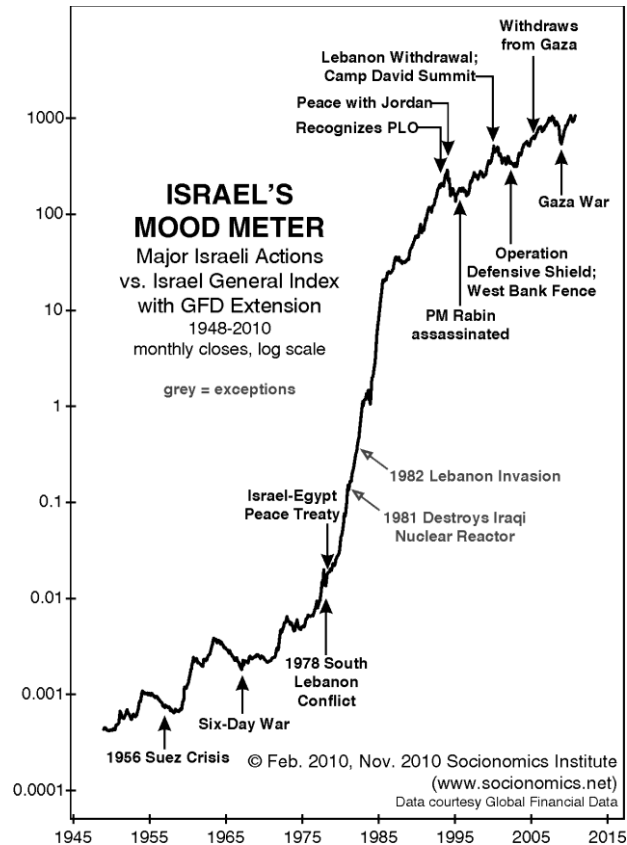

Figure 16 Israeli Social Mood and Events, 1945–2010

8. Conclusions

The foregoing arguments and examples provide evidence to support the notion that the mood of a population, it's so-called "social mood" biases the types of social events and behaviors that we can expect to see on all time scales. But hypotheses and empirical evidence are far from a scientifically-based theory of social phenomena. For that, much more investigation is necessary to give support to the hypothesis presented here or to refute it. So to close, let me list a kind of "mini" research program of the sort I feel is needed to transform the ideas here into something that would begin to look like an actual theory of social processes.

8.1. A Socionomics Research Program

At its deepest level, the research program outlined here aims to explore each aspect of the Central Hypothesis of Socionomics presented above, and to understand both the individual elements and the causal arrows linking them. In short, the overall goal is to refute or confirm the flow of information and timing built-in to the Central Hypothesis.

One of the cardinal principles underlying this research effort is that the movements of prices in financial markets, indexmovements in, say, the Dow Jones Industrial Average (DJIA) or the Standard & Poor's 500 Index (S&P 500), are described on all timescales by

patterns originally discovered by Ralph N. Elliott in the 1930s. These so-called Elliott waves are thus fractal in character, looking the same at whatever timescale one makes observations. A crucial aspect of the research proposed here is to provide a scientific basis for this empirical evidence and to test the hypothesis that the Elliott wave patterns for financial time series serve as a kind of "thermometer" for social mood, in general.

Now we look more deeply at the various components of the research program suggested here. Basically, the plan involves four principal components: *Data and Computation* (tool development), *Social Mood analysis, Social Action*, and *Modeling and Exposition*. Each of these components has its own characteristic questions and modes of analysis, as indicated below.

8.2. Data and Computation

The basic thrust of this part of this program centers on the gathering and analysis of data generated by both human and non-human (natural) sources, in order to analyze the data for Elliott wave structure. Such a step involves acquisition of data from financial and non-financial, but still human-generated, sources, as well as investigating data time series from various parts of the natural sciences, such as engineering, chemistry, and geophysics. Once these data series are at hand, a computer program may then be used to address the following type of questions:

- Do all living systems produce Elliott wave patterns of the same sort? To study this question we must investigate natural phenomena unrelated to human psychology to see if they differ in any basic way from the data gathered on processes in which human decision-making plays a central role. Statistical tests need to be performed to identify and significant differences between the two situations.
- What are the statistical dimensions of idealized (i.e., artificially-generated by computer) Elliott wave patterns and how do they compare with those of real stock-market data?
- Starting with a list of Fibonacci price and time relationships in the DJIA for the period 1932 to the present, do these ratios appear significantly more frequently in market data than could be expected by random occurrence?
- What is the best way to computerize the Elliott wave analysis? For instance, is the EWAVES program developed at Elliott Wave International, Inc. better at identifying the wave patterns than competing commercial programs such as the *Elliott Wave Analyzer* or *ELWAVE*?
- Under what circumstances do Elliott wave patterns appear in data obtained from an artificial stock market, such as the one created at the Santa Fe Institute? In other words, what types of restrictions on market structure(s) and/or trader's strategy sets lead EW patterns to appear—or not appear?

8.3. Social Mood

- What is "social mood"? What type of "sociometers" can one use to measure it? How does social mood emerge out of the "herding" behavior of individuals?
- How can we develop a database of sociometers to measure the shifting patterns in popular culture, such as sports ticket sales, popularity of types of music, and fashion styles? How can we test whether these sorts of social behaviors conform to the Elliott Wave Principle?
- What is the correlation between stock market trends and trends using other types of sociometers?
- What characteristics and patterns portend and/or trigger a change in social mood?

- Can we verify or refute the hypothesis that the majority of financial forecasts are lagged extrapolations of the past, i.e., they produce a picture of the market not as it will be in the future, but as it was in the past?
- What type(s) of network structures (i.e. interaction patterns among individuals) give rise to a discontinuous shift in the social mood? Can we verify or refute the hypothesis that the vast majority of economic/ financial forecasts never successfully predict change?
- What is the role of the media in generating the social mood?
- Can the social mood be manipulated? How and on what scale?

8.4. Social Behavior

- In what way, if any, does the Central Hypothesis of Socionomics matches up with the Central Dogma of Molecular Biology, which states that *DNA → RNA → Protein*?
- How can we investigate whether stock market trends reliably follow or lag "predicted" types of social actions and behaviors?
- Does the empirical data support the socionomic hypothesis that the intensity of social actions and behaviors like high unemployment in a society corresponds to the degree and label of the Elliott wave in force?

8.5. Modeling

- How should we go about creating a "bottom-up" model of financial markets, in which the Elliott wave pattern of price changes is a consequence of the model, not simply an observed epiphenomenon?
- What criteria and methods should we use for evaluating the effectiveness of an analytical or computational model that predicts changes in social behavior?

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