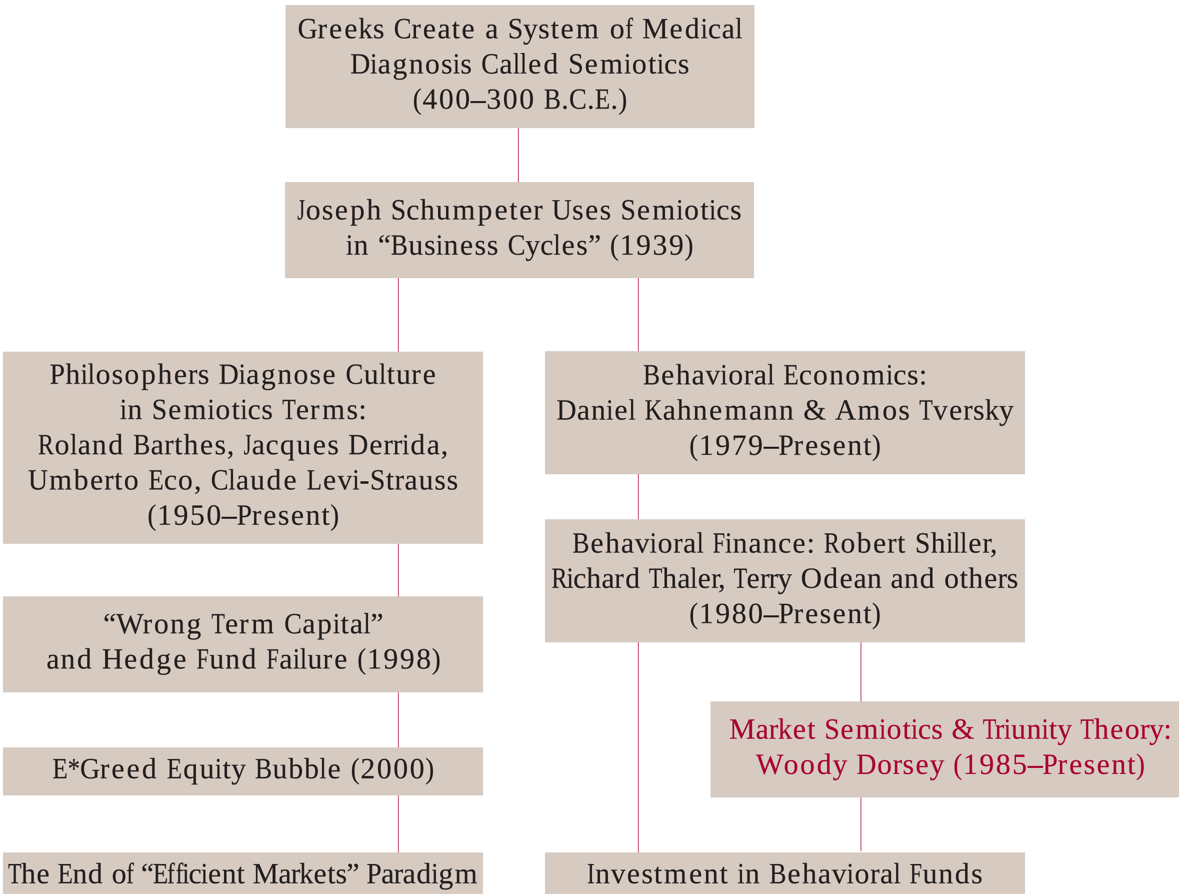
MARKET SEMIOTICS

Behavioral Market Diagnosis

THE EVOLUTION OF SEMIOTICS AND BEHAVIORAL FINANCE



"Human behavior is the key determinant of markets"
~Woody Dorsey

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Semiotics Means Diagnosis

Behavioral Finance Made Practical

HUMAN BEHAVIOR HAS ALWAYS HAD A ROLE IN ECONOMIC AFFAIRS. YET, IT IS ONLY IN THE LAST 30 YEARS THAT BEHAVIORAL ECONOMICS HAS ACHIEVED ACCEPTANCE AS A DISTINCT ACADEMIC FIELD. BEHAVIORAL FINANCE SEEKS TO IDENTIFY THE HABITUAL COGNITIVE ERRORS OF INVESTORS AND THEIR EFFECTS ON FINANCIAL MARKETS. HOWEVER, THE BEHAVIORAL FINANCE FIELD HAS NOT YET DERIVED A GENERAL THEORY DESCRIBING THE ROLE OF IRRATIONALITY IN MARKETS.

AT MARKET SEMIOTICS, WE ACCEPT THE LARGER PROPOSITION THAT HUMAN BEINGS, ECONOMIC CHOICES AND MARKETS ARE IRRATIONAL. THERE IS ALWAYS AN IRRATIONAL ELEMENT AT WORK IN THE MARKET. IN FACT, THESE PERPETUAL DISEQUILIBRIA ARE EXACTLY WHAT CREATES MARKET OPPORTUNITIES. DIAGNOSING SUCH ERRORS WHICH CREATE THEM IS THE PITH OF BEHAVIORAL FINANCE. MARKET SEMIOTICS HAS GONE BEYOND THE IRRATIONALITY/RATIONALITY DICHOTOMY TO DERIVE A NEW THEORY WITHIN THE BEHAVIORAL FINANCE PARADIGM.

WOODY DORSEY DEVELOPED “TRIUNITY THEORY,” WHICH INCORPORATES THE ELEMENTS OF MOOD, MIND AND BODY TO PROVIDE A NEW UNDERSTANDING OF THE WHOLE MARKET ENTITY.

“Everything I have experienced suggests that, at core, economic conditions and markets are grounded in the human psyche.”
~Robert Rubin

What is Market Semiotics?

MARKET SEMIOTICS IS AN INDEPENDENT RESEARCH COMPANY BASED IN VERMONT, THAT HAS BEEN PROVIDING INSTITUTIONAL RESEARCH SINCE 1985. SEMIOTICS IS THE PRACTICE AND PHILOSOPHY OF DIAGNOSIS. WE APPLY THIS ANALYTICAL APPROACH TO DIAGNOSING THE SYMPTOMS OF THE MARKET. OUR WEEKLY MARKET REPORT IS READ BY SOME OF THE TOP INVESTORS IN THE WORLD.

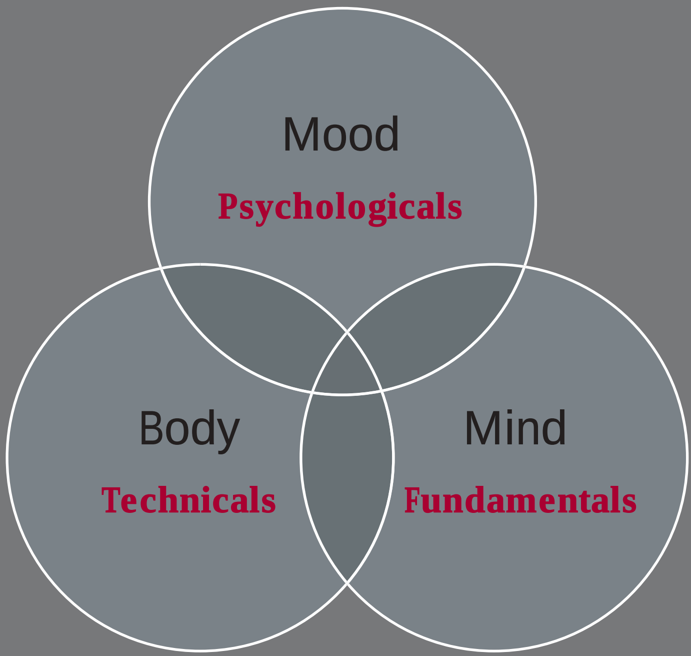
OUR METHODOLOGIES WHICH ARE ROOTED IN BEHAVIORAL FINANCE WERE DEVELOPED BY WOODY DORSEY. BECAUSE HE HAS NEVER WORKED ON WALL STREET, HE MAINTAINS A COMPLETELY UNIQUE AND UNBIASED MARKET PERSPECTIVE. HIS COMPREHENSIVE APPROACH AS DETAILED IN TRIUNITY THEORY IDENTIFIES AND MEASURES THE SYSTEMIC COGNITIVE ERRORS OF MARKET PARTICIPANTS.

AS ONE OF THE ONLY RESEARCH COMPANIES APPLYING BEHAVIORAL FINANCE TO PRACTICAL MARKET FORECASTS, WE PROVIDE STRATEGIC AND TACTICAL PERSPECTIVES ON EQUITIES, FIXED INCOME, FOREIGN EXCHANGE, ENERGY, COMMODITIES AND STOCK SECTORS.

THIS PAMPHLET DESCRIBES THE PRINCIPLES OF MARKET SEMIOTICS AND TRIUNITY THEORY WITH EXAMPLES OF THEIR EFFECTIVENESS.

"What is so intriguing is that this type of behavior has characterized human interaction with little appreciable difference over the generations. Whether Dutch tulip bulbs or Russian equities, the market price patterns remain the same."
~Alan Greenspan

The Triunity Theory of Market Semiotics



Woody Dorsey's Triunity Theory proposes that there are three different and distinct symptoms of the market which correspond to how participants **feel (Psychologicals), think (Fundamentals)** and **act (Technicals).** By studying and measuring these three components, we arrive at a comprehensive analysis of the market. Each of these market functions are always in disequilibria to some degree. These persistent disequilibria result in systemic investing errors. Identifying the errors of other market participants, in turn, leads to investment opportunities.

The history of markets can even be seen as a complex set of recurrent human errors. We know the market habitually over-reacts or under-reacts. Behavioral Finance, as practiced by Market Semiotics, provides practical methods for measuring this "reactive" reality of the market. Investors errors fall into one of three categories: the **Psychologicals, Fundamentals** or **Technicals.** By studying these three symptoms, we arrive at a more complete diagnosis of the market. An independent study of Semiotics Stock Market Signals, available upon request, demonstrates a history of significantly correct predictions.

COMPONENTS OF TRIUNITY THEORY

In the same way that the fields of Macroeconomics and Microeconomics simply reflect different scales or cosmoses of activity, Triunity Theory proposes an equally obvious scalar relationship. Man, or the individual investor, is a microcosm of the market as a whole.

That is, the rationalization, psychology and investing behavior of a individual investor is directly related to the thinking, feeling and acting of all investors. The aggregate of all investors is, of course, the market itself. Thus, the best guide to how markets function is man himself.

Indeed, human beings are the sole causal factors of the market. There is nothing in the market that is not a reflection of human behavior.

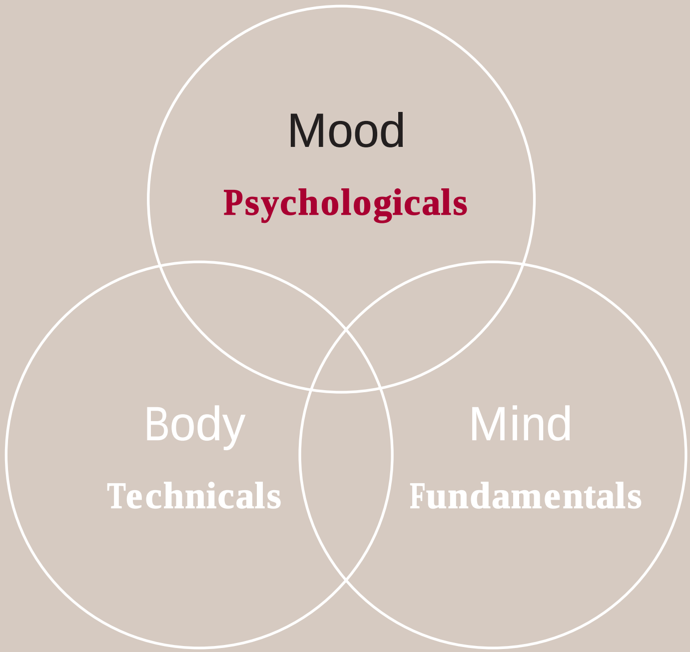
Thus, the market is an exact mirror of the structure of man, who has three distinct but inter-related brains. **Mood, Mind** and **Body** translate into the **Psychologicals, Fundamentals** and **Technicals** of the market. The implementation of Triunity Theory requires different metrics than those used by traditional economics. Market Semiotics uses metrics such as sentiment, slogans and price trends to diagnose the market.

COMPONENTS: METHOD, BRAIN, FUNCTION AND METRIC OF TRIUNITY THEORY

COMPONENT	Mood	Mind	Body
METHOD	**Psychologicals**	**Fundamentals**	**Technicals**
BRAIN	Emotional	Rational	Primal
FUNCTION	Feeling	Thinking	Acting
METRIC	Sentiment	Slogans	Price Trends

"Man is the Measure of all Markets"
~Woody Dorsey

Psychologicals are the Mood of the Market



Long before Behavioral Finance became popular, Market Semiotics made an exacting study of investor psychology and market sentiment. We coined this emotional component of the market as the **"Psychologicals" (Mood).** Market Semiotics maintains a proprietary database of stock market and bond market sentiment that is collected through a daily polling process from about 100 "listening posts." Each of these listening posts effectively filters thousands of sentiment sources, such as the text of brokers and traders, as well as web and media sources. This semiprofessional investor class captures the trickle-down feelings from portfolio managers and strategists, who influence the trading class that is slightly below them. The semiprofessional class also captures the sentiment of the public investor through a similar trickle-up effect.

The Market Semiotics sentiment polling process provides a regular quantitative view of the "public mind" of the market. Every day we generate a bullish sentiment number for stocks and bonds. We call these sentiment data points, emota or emotional impulses.

An important aspect of sentiment sampling is consistently collecting the same sentiment, in the same way, over a long period of time. The next step, however, is much more important. Sentiment data and psychological indicators are useless unless one has an accurate interpretive framework. Diagnosing the market correctly requires precise interpretation of what market sentiment "means" at different times.

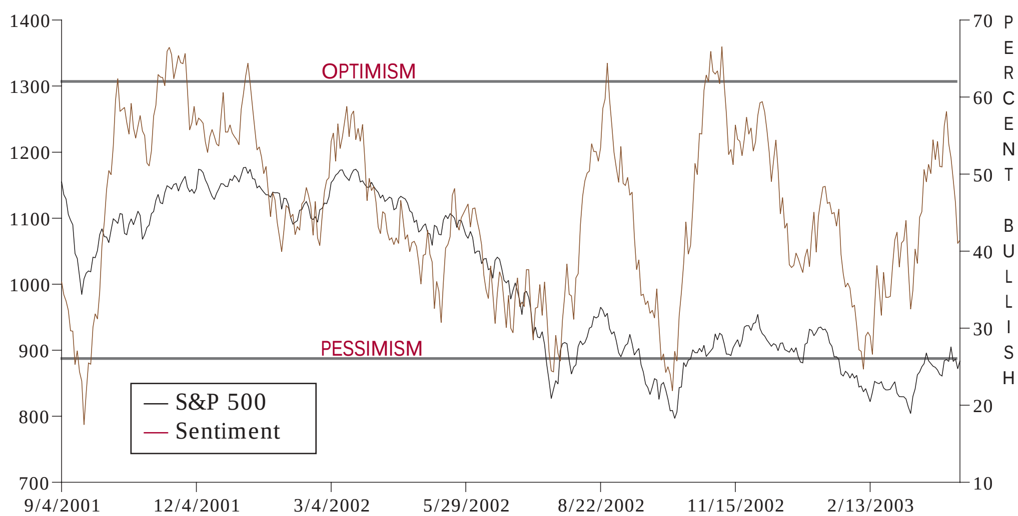
METRICS OF THE MOOD COMPONENT

Are you always supposed to "sell the market" when bullish sentiment is high? As noted in the graph below, high sentiment (**92%** bullish on 10/26/1999) can signal a great buying zone and high sentiment (**100%** bullish on 1/3/2000) can also signal a great selling zone. Sometimes bullish Semiotics Sentiment is bullish for the market and sometimes it is bearish!

S&P 500 WITH DAILY SENTIMENT EXTREMES (7/1999–2/2000)

The analysis of our historical sentiment database is critical for determining the psychological context of the market. This graph shows a 15-day moving average of Market Semiotics stock sentiment. Each of the four pessimistic extremes was a good time to buy. Optimistic extremes were selling opportunities.

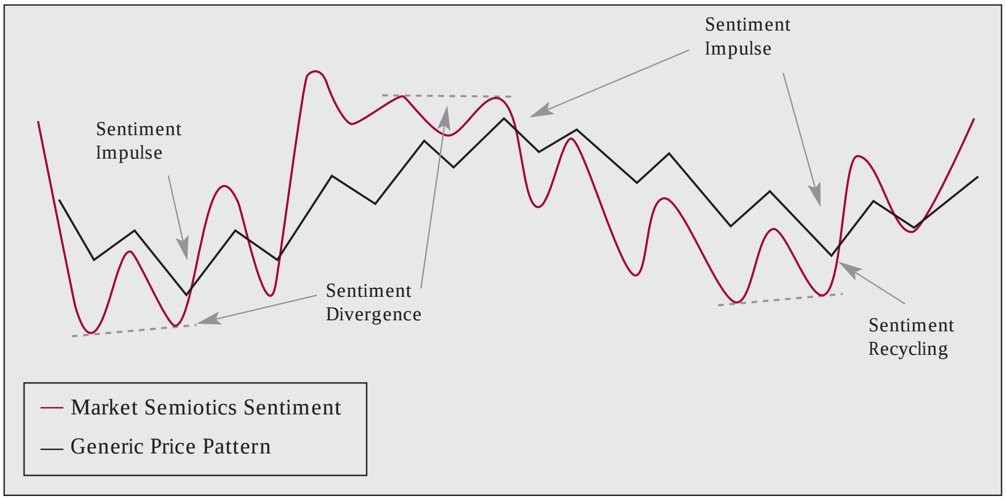
S&P 500 WITH MOVING AVERAGE OF MARKET SEMIOTICS SENTIMENT (9/4/2001–9/9/2003)



A MODEL OF MARKET SENTIMENT

THE GENERIC SENTIMENT LIFECYCLE

The relationship between price and sentiment changes during different phases of the market. These generic price/sentiment correlations provide a guide to the next move of the market.



MARKET SEMIOTICS SENTIMENT PRINCIPLES

- Sentiment Divergence occurs at market extremes
- Trends begin with Sentiment Impulses
- The next series of Sentiment Divergences signals trend maturity
- Then the Sentiment process begins again or recycles

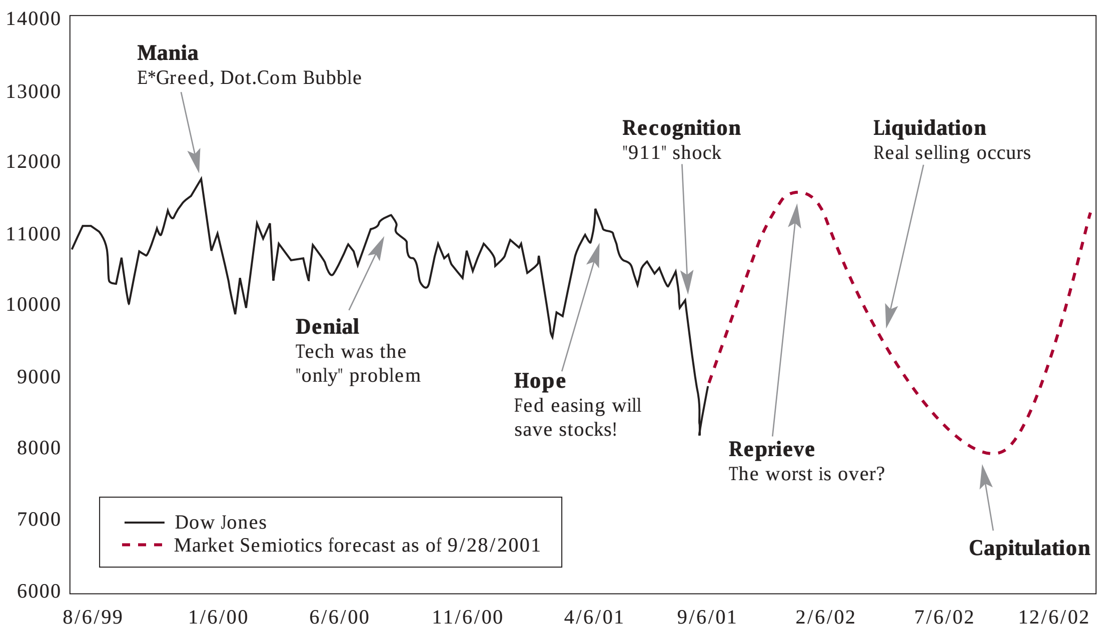
The **Semiotics Sentiment Model** attempts to capture these changing relationships of the generic sentiment lifecycle. The correlation between price and sentiment can indicate buying or selling opportunities. For example, at market lows, price and sentiment typically achieve a high correlation. This is because the majority of market participants tend to feel cohesively pessimistic as the market declines. In other words, price and sentiment go down together. When everyone "feels" that they have fully anticipated the market's bearish consequences, the emotional environment achieves its maximum negative potential. The **Semiotics Sentiment Model** is optimized to identify these environments. The model outperformed the S&P 500 by 257% during the study period from 1/1998 to 9/2002, which was comprised of both up and down markets. A white paper on the Semiotics Sentiment Model is available upon request.

THE MARKET HAS DISTINCT PSYCHOLOGICAL PHASES

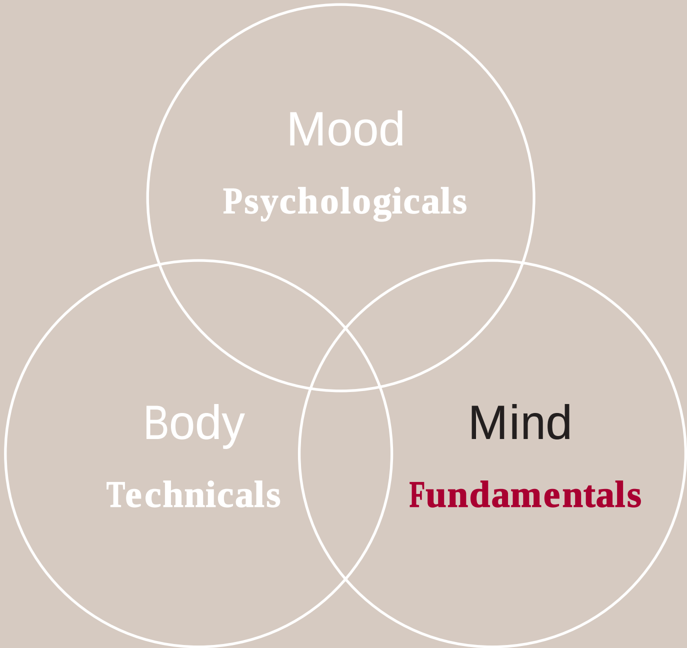
The emotional environment at market highs is very different from the emotional environment at market lows. Most people have a simplistic view that market psychology is only about fear and greed. In actuality, there is a diversity of specific psychological phases in the market. Irrationality rules markets, and, it has rules. Market Semiotics has developed defined psychological models to describe different market phases. By combining sentiment, psychological phases and fundamental events, we generate insightful forecasts like the one Market Semiotics suggested on 9/28/2001, as noted in the graph below.

The **Semiotics Stages of a Bear Market** graph is not a "price" forecast. Too many people assume that price levels can be predicted. Valuations, as identified by price levels or PE ratios, are always relative. The most important thing is to understand the psychological phase of the market. The fixation on price levels is a typical cognitive error known as anchoring. It may be more useful to stop obsessing on price levels and focus on where a market is in its psychological process. The goal of Behavioral Finance strategy is to develop practical models of irrationality, such as the Semiotics Stages of a Bear Market. Below is a "psychological phase" forecast which we had shown on *CNBC* and *USA Today* just after the 9/2001 market low.

THE SEMIOTICS STAGES OF A BEAR MARKET: FORECAST OF 9/28/2001



Fundamentals are Transient Investment Themes



Unlike the Psychologicals, which are everything we feel about the market, **Fundamentals** or the **Mind** component comprises everything we think about the market. The Market Semiotics definition of Fundamentals goes beyond rational market data such as GDP figures, PE Ratios or earnings announcements. The **Mind** component is what experts think about this fundamental data. Why is it that the fundamental facts of last week or last month, which were promoted as being so bullish for stocks, suddenly seem to be not so bullish? This confirms their fickle nature. Fundamentals are just the changing market stories perpetually spun by the presumed pundits. We view Fundamentals as only being **Transient Investment Themes.**

Market Semiotics has created metrics for the **Mind** component based on themes generated from the financial media, such as magazine covers, newspapers and media headlines. These studies, such as "page-grading" and "slogan searches," offer a unique distillation of financial culture. Whatever the media "covers" tells us what investment themes are important to the majority of investors. Even the front page of newspapers can be read in a new context.

METRICS OF THE MIND COMPONENT

SLOGAN SEARCHES

The measurement of the **mind** component of Triunity Theory is accomplished by collecting data about **Transient Investment Themes.** Market Semiotics measures the incidence of media headlines in order to determine the popularity of financial slogans. Our databases of these slogans can be used to model and interpret the importance of investment themes. As in the analysis of any investment data, an interpretive framework is required. The slogan search in the graph below shows the history for the headline "Terrorism." Note that there was an enormous spike in the "terrorism" slogan just after September 11, 2001. Most market commentators assumed that the equity markets had made a significant bottom because such a terrible event was not likely to happen again. But Market Semiotics forecasted that the stock market would have a "Reprieve" rally but that it would eventually make new lows. Our analysis was based in part on the inference that "Terrorism" as a concept was just beginning. The facts of history show that markets rarely bottom on historical events. They tend to bottom on the psychological discounting of events when the consequences have been fully recognized. The investment application of how information propagates, known as Memetics, is still in its infancy.

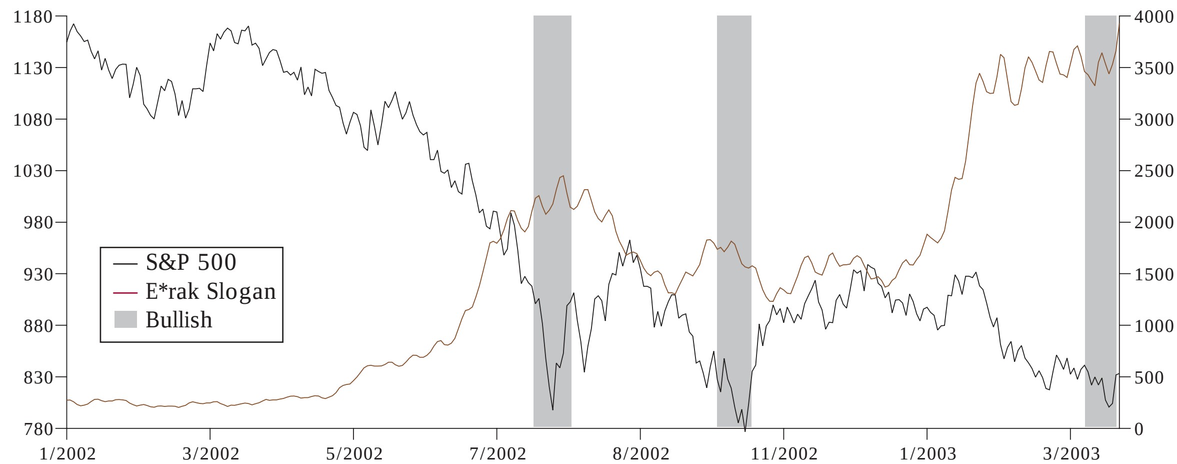
SLOGAN SEARCH FOR TERRORISM HEADLINES

"Existing theories about the behavior of stock prices are remarkably inadequate. They are of so little value to the practitioner that I am not even fully familiar with them. The fact that I could get by without them speaks for itself"
~George Soros

E*RAK SLOGAN SEARCH AND THE S&P 500

The history of markets demonstrates that the extreme of every market era is defined by a compelling concept which becomes so popular that if effectively becomes a slogan. The relationship between slogans and market indices can become extraordinarily correlated. Whenever investors became the most obsessed with Iraq, as noted in the slogan search below, the stock market was bottoming. When investors became complacent about Iraq, stocks were topping. During the time period in the graph, the E*RAK slogan maintained an 85% correlation with the S&P 500. When anything becomes a slogan, it means something much greater than itself. So as the **Transient Investment Theme** of Iraq achieved slogan status, we re-named it E*RAK. The extreme degree of the E*RAK slogan in March of 2003 was one of the research components that led Market Semiotics to issue a bullish forecast on 3/11/2003 for a 5-month rally.

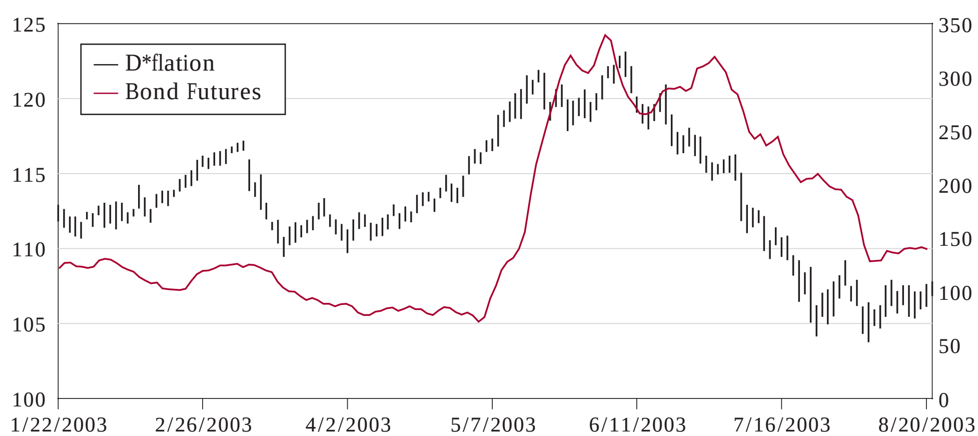
SLOGAN SEARCH RESULTS FOR IRAQ



Transient Investment Themes Coincide with Market Extremes!

In the Summer of 2003, the D*flation slogan achieved propaganda status. Market Semiotics predicted a major bond market high for mid-June. The high did occur there and let to the greatest price decline in 50 years. Memetics works.

D*FLATION SLOGAN SEARCH & BOND



AN EAR FOR AN ERA

IDENTIFYING EXTREME FINANCIAL SLOGANS

Market Semiotics has created a model for evaluating the phase of any **Transient Investment Theme** or Fundamental Story. Triunity Theory posits that the propagation of market stories follows a predictable path. The study of how ideas propagate is called Memetics. A meme, like a gene, is transmitted from one person to another, but a meme is an information code rather than a genetic code. The **Semiotics Memetics Model** offers a new way to understand why financial slogans seduce the majority of investors at market extremes such as the E*Greed slogan, which we identified in Q1, 2000. The Semiotics Memetics Model shown below suggests that investment themes achieve maximum appeal when they achieve slogan status. Once a meme or a fundamental idea peaks in the propaganda realm, they finally lose their power to attract new investors into their investment paradigm.

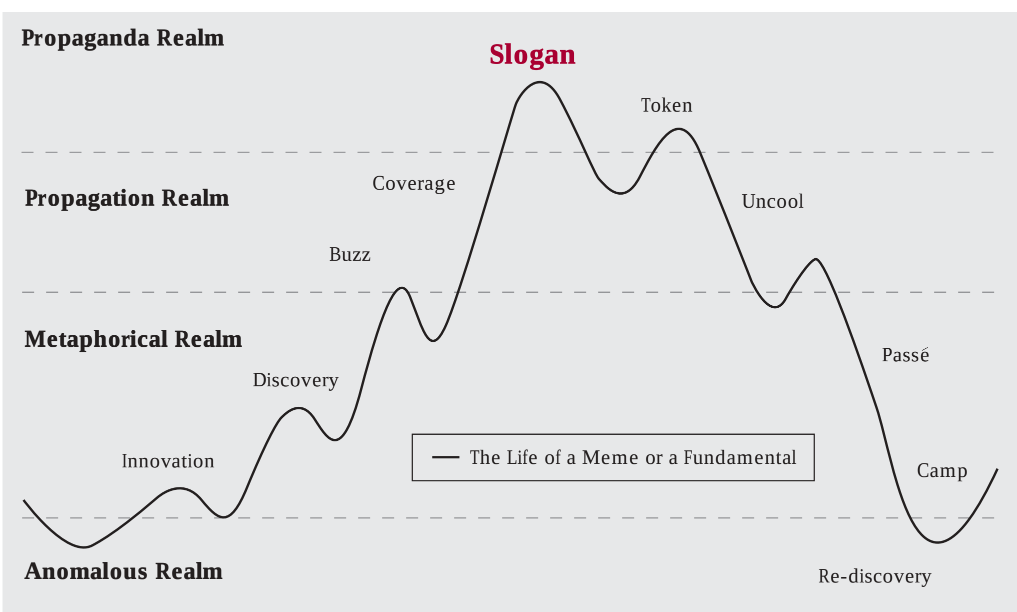
FINANCIAL SLOGANS IDENTIFIED BY MARKET SEMIOTICS

Fant-Asia; Q3, 1998: The compelling conventional wisdom was to abandon all Asian assets, sell stocks and buy dollar bonds. In actuality, bonds were a great sale and stocks presented a major buying opportunity.

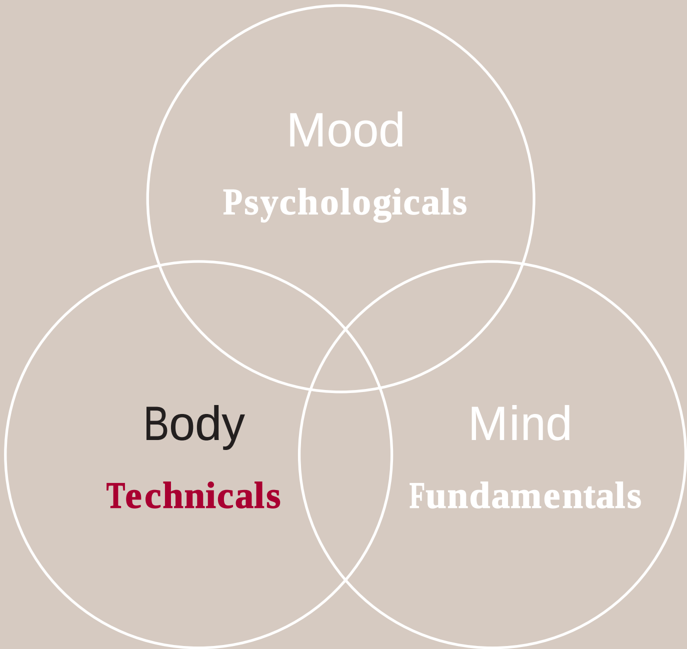
E*Greed; Q1, 2000: The majority of investors were led to believe that it was easy to become as rich as you wanted by buying into the new economy dot.com paradigm. Market Semiotics predicted that a major stock market high would lead to the most severe bear market in 20 years.

E*RAK; Q1, 2003: The consensus was convinced that deflation and the renewed threat of recession argued for avoiding stocks (E*Quiphobia) and staying safe with bonds. Market Semiotics suggested that stocks had already bottomed in 10/2002.

THE MARKET SEMIOTICS MEMETICS MODEL



Technicals are about the Trend of the Market



While Psychologicals describe how investors feel about the market and Fundamentals are how investors think about the market, **Technicals** show how investors **Act** in the market. Technicals, or the **Body** component of Triunity Theory, represent the physical manifestations of market behavior, such as price, volume and volatility. In 1985, Woody Dorsey developed **Trend Duration Analysis** to study the habitual behavior of price trends. Trend Duration Analysis is the study of the attention span of the market.

The market is always involved in some kind of trending behavior. Even price ranges are special kinds of trends. The market may continuously change on the surface, but its principles do not change, and the durations of the price trends often remain the same. **Trend Duration Analysis** allows us to estimate the length of trends without the unnecessary baggage of being fixated on any particular price projection.

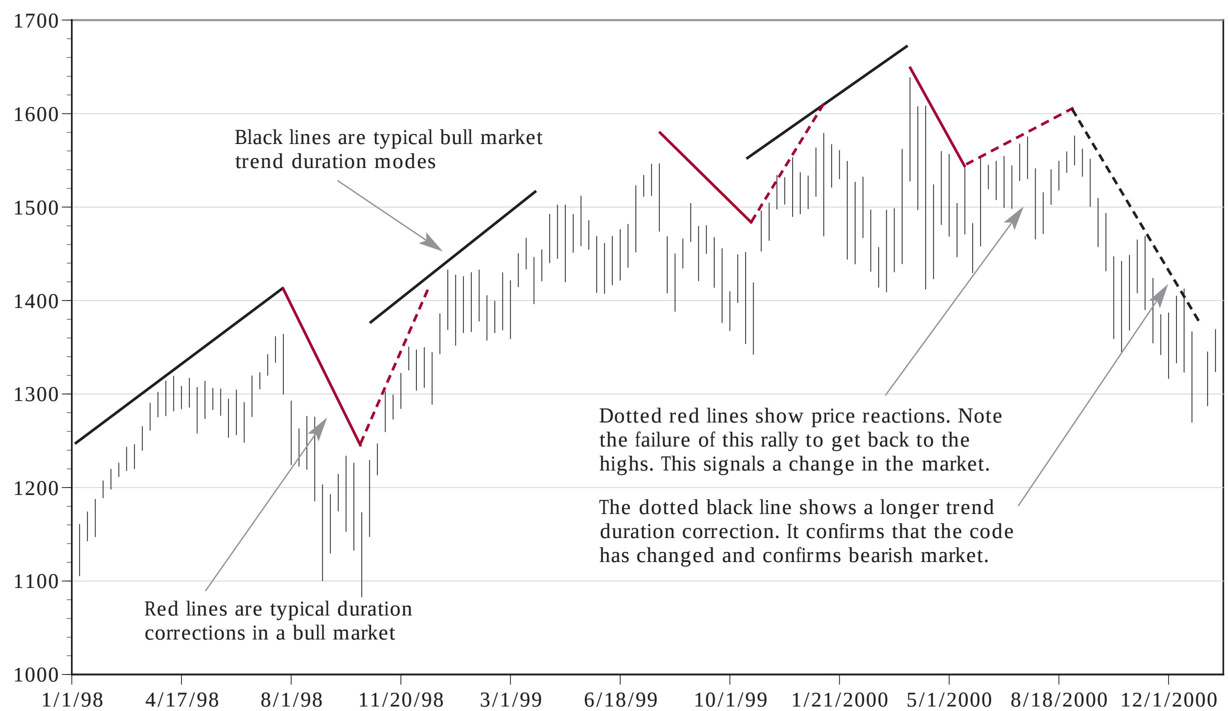
"The Trend is your Friend?"
Only if you make an exact study of it.

THE METRICS OF THE BODY COMPONENT

MARKETS HAVE DISTINCT PATTERNS OF TREND DURATION

Markets trend. The most direct definition of a bull market is that the rallies are always longer than the declines. Typical codes of attention spans, or trend durations, develop and repeat during the market process. How prices "behave" during a trend tells us about the strength of the market. While there are a multitude of technical theories, this simple analysis of the trend is a unique distillation of market price behavior. It simplifies all other technical measures into a singular metric. And it is all you need to determine the technical condition of the market.

TREND DURATIONS AND THEIR INTERPRETATION



Trading Ranges Are Trend Durations Too.

"During a sideways market, some people will say the market is going nowhere; it is just in a range. But a range is really a trend. The market is always open and it is always operating. When it appears to be doing nothing but tracing out a range, it is secretly trending and plotting its next move."

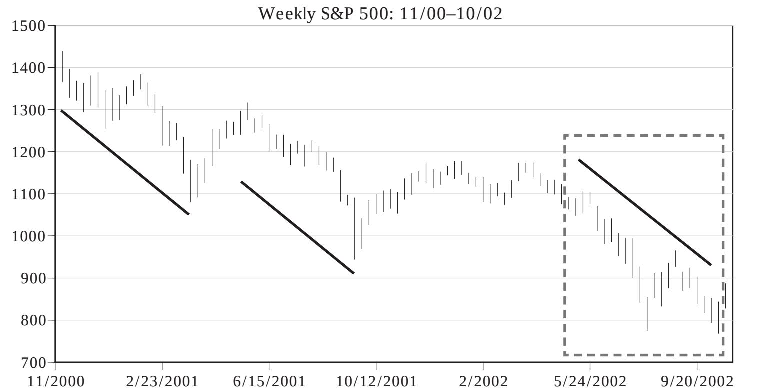
~Woody Dorsey

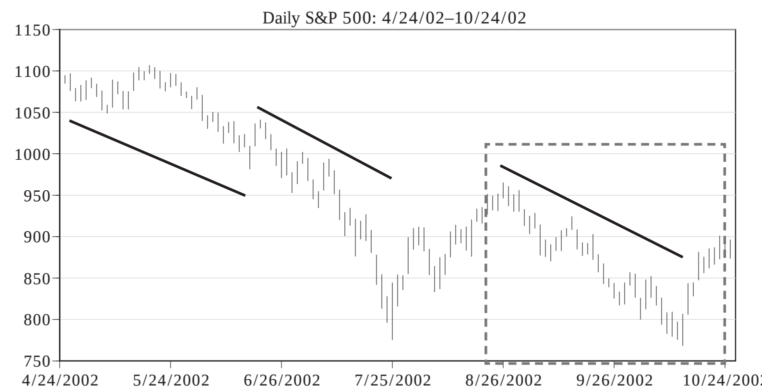
THE MARKET SEMIOTICS TREND POSITIONING SYSTEM

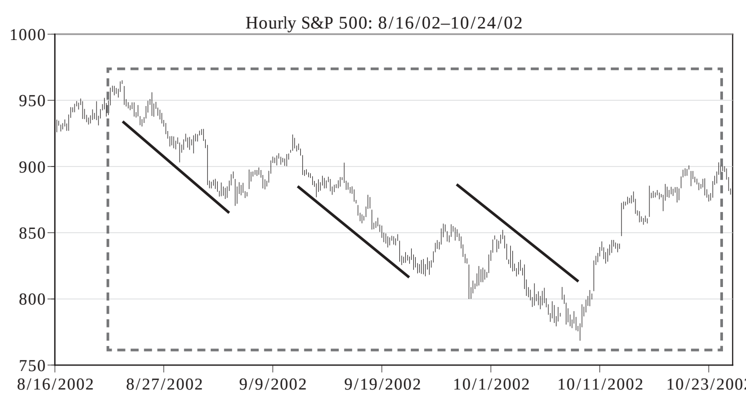
The graphs to the right, from Woody Dorsey's book "Behavioral Trading", show three scales of Trend Duration Analysis which, using the Trend Positioning System, located a stock market low on 10/10/2002.

The **Trend Positioning System** works with a series of smaller and smaller time scales to resolve the current location of the market. A hierarchy of trend durations suggests that when the larger trend duration is down, intermediate-term trend durations defer to the larger trend. Likewise, shorter-term trends defer to the pressure of both the intermediate-term trend duration and the longer-term trend duration.

Thus, there is a hierarchy of trend durations at work simultaneously, which may help us locate the market situation with relative precision. In other words, the longer the length of the trend duration the more influence it has over any shorter trend durations. The shorter term trend durations can more precisely pinpoint a reversal in a larger trend. Thus, in the graphs on the right, the weekly trend duration suggested a low in the Fall of 2002. The daily trend duration suggested a low in the first two weeks of October. The hourly trend positioning projected a market low around October 9th to the 11th. Thus all three degrees of trend duration coalesced to locate the position of an important market low.





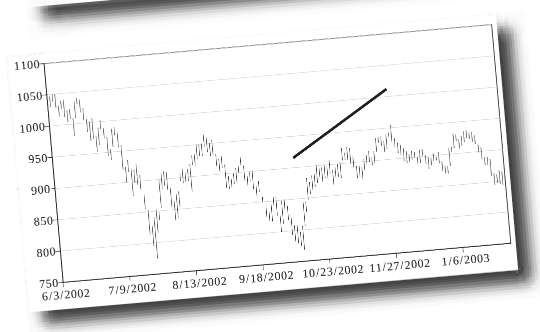


Triunity Theory at Work

Market Semiotics uses all of the components of Triunity Theory to diagnose the markets. When all three methodologies are aligned we arrive at what Market Semiotics calls a High Probability Profile. At the end of November in 2002, the Mood, Mind and Body components of Triunity Theory were all cohesive in calling for a market correction.

Mood Component: The Market Semiotics Sentiment Database shows that the daily sentiment for stocks on 11/29/2002 was 99% bullish.

Mind Component: The “page-grading” of 11/27/2002 indicated a bullish spin, as noted by the “positive” Tom Ridge coverage. This signaled overconfidence about the market for December.



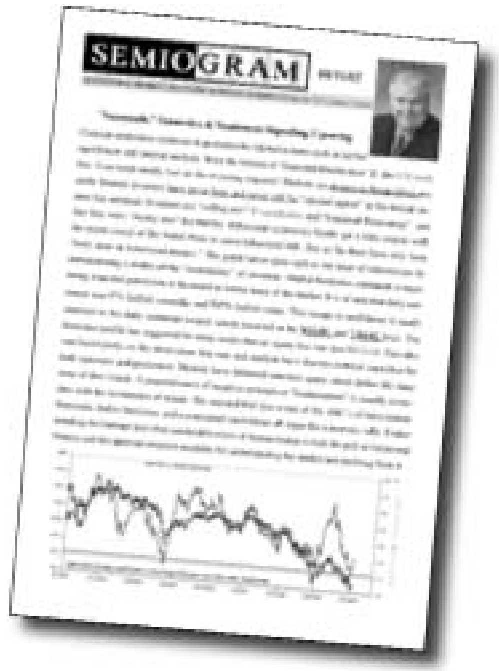
Body Component: The price trend was mature since the market had rallied for seven weeks.

Market Diagnosis: These three symptoms suggested a negative December of 2002. While everyone was expecting a *Santa Claus* rally, Market Semiotics predicted a December decline. Indeed it was one of the worst Decembers for stocks on record.

Market Semiotics Research

The Sentiment update reproduced below detailed the unique condition of the market on 10/11/02. The forecast for a market bottom corresponds with the metrics of the Trend Positioning System graph shown earlier in this publication. The practical Behavioral Finance tools of Market Semiotics correctly identified this important change in the market.

SEMIOGRAM 10/11/02:
"Seasonals," Semiotics & Sentiment Signaling Upswing:


SEMIOGRAM

Classical economics continues to postulate far-fetched notions such as perfect equilibrium and rational markets. Were the lessons of "Irrational Exuberance" & the E*Greed, Dot.Com bomb totally lost on the investing majority? Markets are **always in disequilibria** precisely because investors **have never been and never will be** "rational agents" as the dismal science has assumed. Investors are "selling into" **E*quiphobia** and "Irrational Dissonance" just like they were "buying into" the bubble. Behavioral economics finally got a little respect with the recent award of the Nobel Prize to some behavioral folk. But so far there have only been "baby steps in Behavioral Finance." The graph below goes right to the heart of behaviorism by demonstrating a metric of the "irrationality" of investors. Market Semiotics Sentiment is registering irrational pessimism in the mood or limbic brain of the market. It is of note that daily sentiment was **0% bullish yesterday and 94%** bullish today. This torque in confidence is nearly identical to the daily sentiment torques which occurred at the **9/22/01 and 7/24/02** lows. The Semiotics profile has suggested for many weeks that an equity low was due 10/11-14. This idea was based partly on the observation that men and markets have discrete metrical capacities for both optimism and pessimism. Markets have delimited attention spans which define the durations of their trends. A preponderance of negative concepts or "fundamentals" is usually coincident with the termination of trends. The seasonal Fall low is one of the ABC's of behaviorism. Seasonals, limbic heuristics and a conceptual capitulation all argue for a recovery rally. Understanding the habitual and often predictable errors of human beings is both the pith of Behavioral Finance and the optimum research modality for understanding the market and profiting from it.

More about Market Semiotics

BIOGRAPHY

Woody Dorsey has never been part of the Wall Street culture. While his innovative work in Behavioral Finance has been featured in *Time*, *Business Week*, *Barrons* and *USA Today*, he maintains a position of unbiased independence from his office in Castleton, Vermont. His Market Semiotics report, published since 1985, is read by some of the most influential institutional investors in the world. His innovations in Market Sentiment Interpretation, Transient Investment Themes and Trend Duration Analysis, provide a new system of market diagnosis called Triunity Theory. This behavioral approach led him to identify major conceptual extremes such as "Fantasia," the deflationary climax in Q3, 1998, "E*Greed," the dot.com extreme in Q1, 2000; and E*Quiphobia in March of 2003. Market Semiotics uses proprietary innovations in Behavioral Finance to provide specific market perspectives for a select group on institutional clients. Mr. Dorsey is a graduate of Amherst College, where he majored in economics.

TESTIMONIALS

Jim Grant, Editor Grants Interest Rate Observer "On Wall Street, there are many copies, few originals. Woody Dorsey is an original par excellence."

Felix Zulauf, Zulauf Asset Management "There are not many analysts in the world worth following. Woody Dorsey is an exception. His special way of analyzing markets kept you on the right side of the markets at major and intermediate-term turning points over the years. I would not like to be on the other side of a trade with Woody Dorsey."

John Porter, Head of Global Research, Barclays Capital "His proprietary sentiment indices have been of immeasurable value in positioning for major moves in U.S. capital markets. His unique approach is indispensable to all portfolio managers."

BEHAVIORAL TRADING

Published by Texere Press in 2003
The Market Semiotics research methodologies and a complete description of Triunity Theory are given in "Behavioral Trading — Methods for Measuring Investor Confidence, Expectations and Market Trends" by Woody Dorsey.

"Triunity Theory is a practical philosophy of market behavior, which is based on the simple but profound structure of man himself. It proposes that the markets are but a larger cosmos of human behavior. Markets mirror man and they do so in a relatively exact way. We have shown the parallels of their structure, functions and manifestations. Triunity Theory offers a new understanding of Behavioral Finance and financial markets in general. Furthermore, it delivers practical results, or cash value."

~Woody Dorsey

"Observe everything, believe nothing and invest only on the basis of the behavioral errors of others."
~Woody Dorsey

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