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Elliott Wave In The 21st Century

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<http://www.investopedia.com/university/advancedwave/>

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Introduction

There is a standard joke shared by technical analysts that if you were to put twelve Elliott Wave practitioners in a room, they would fail to reach an agreement on wave count and the direction in which a stock is headed. There is no doubt that the [Elliott Wave theory](#) has posed some interpretive challenges, but is such skepticism fair?

[Robert Prechter](#), the undisputed leading expert of Elliott Wave, has made some excellent forecasts using the theory, particularly in the '70s and '80s - he forecasted the horrific [crash of 1987](#). But Prechter's record at the end of the twentieth century has not been stellar. In fact, his book "At The Crest Of The Tidal Wave" (1995), which publicly called for the end of the great bull market in 1995, was nearly five years and many [Dow](#) points premature; he was advising clients to exit the market even though the ascent was nowhere near its end.

If even the leading Elliott Wave expert finds Elliott Wave theory and its application so challenging, what hope is there for the rest of us? The high degree of subjectivity involved in using the theory is one reason why it can be so problematic and why it is rare to find agreement among practitioners. This leads to uncertainty, which in trading or investing leads to inaction. This may explain

why so many traders opt to trade without Elliott Wave or give up in frustration after using it for a while. But is such an attitude akin to throwing the baby out with the bath water?

In this feature, we hunt down and use Elliott Wave-based programs and products that greatly streamline the process of taking the theory and applying it to trade. Think of these as applications that help bring Elliott Wave into the twenty-first century.

Our goal is to familiarize readers with the new millennium version of Elliott Wave theory. For those who may have rejected the theory out of frustration, this tutorial will demonstrate how new developments in technology have transformed this application, which was developed more than sixty years ago.

First, let's take a look at the history of Prechter's application of Elliott Wave and how it demonstrates both the successes and challenges of the theory.

Challenges Faced By An Expert

In late September and early October 1987, [Robert Prechter](#) saw three conditions that had not occurred since the top of 1976. To begin with, the price pattern of the wave structure in the U.S. stock market [rally](#) between Sept 20 and Oct 2 of 1987 took the shape of a rebound in a larger decline, rather than the start of a new wave. It was typical of a [bear market](#) rally.

Secondly, he observed a distinct reduction in upside momentum, and the trading index quickly became extremely [overbought](#), which indicated that the rally was in trouble. [Advance/decline](#) ratios were the worst of the year, suggesting that market internals were in failure mode.

Finally, Prechter noticed that investor psychology was shifting strongly and that premiums on stock [index futures](#) had soared to their highest levels in 18 months. In other words, traders and investors were more bullish than they had been in the previous year and a half. With most of the market players in long positions, who was left to buy?



Figure 1 – Daily Dow Jones Industrial Average 1987 showing date (Oct 2, 1987) when Prechter advised clients to exit the market.

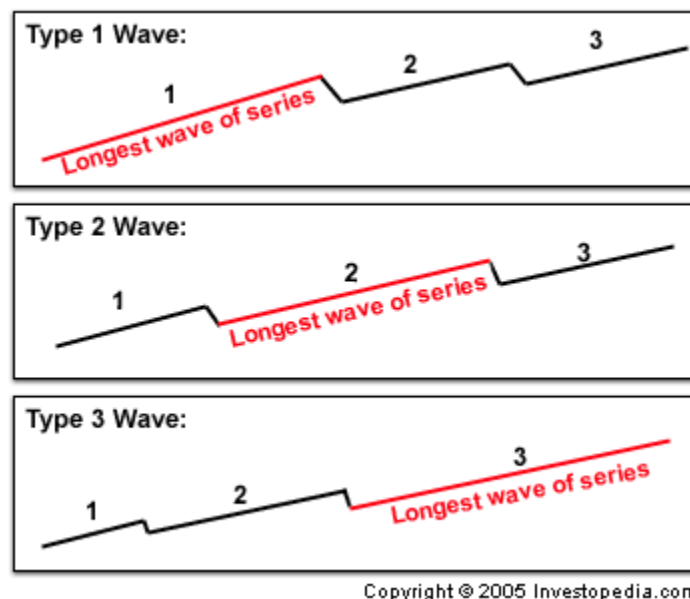
It was enough to cause Prechter to advise his subscribers to get out on Friday, Oct 2, 1987 (according to the article "Black Monday Postscript," published in [S&C](#) Volume 5 Issue 11) (see Figure 1). The Dow Jones Industrial Average closed at 2640.99. The following Monday - and the ensuing two and a half weeks - saw the mighty index drop to 1738.74 in an astounding decline of more than 34%. Oct 19 became known as [Black Monday](#) and set the record for the largest one-day percentage drop - a startling 23%. Clients who took Prechter's advice to get out missed the sickening ride down and no doubt felt deeply indebted to him.

Robert Prechter has been studying Elliott Wave theory since the 1970s. He used it while working as a technical market specialist at Merrill Lynch. In 1978 he co-authored "Elliott Wave Principle" with A.J. Frost. He also launched *The Elliott Wave Theorist*, a newsletter devoted to the analysis of U.S. markets. In the 1980s, Prechter became a household name in the financial community, and he won numerous awards for [market timing](#), as well as the U.S. Trading Championship. The Financial News Network (now CNBC) dubbed him the "guru of the decade" in the 1980s. He is the CEO and founder of Elliott Wave International and has authored numerous books about Elliott Wave, including "At The Crest Of The Tidal Wave" (1995), "View From The Top Of The Grand Supercycle" (2003), "Conquer The Crash: You Can Survive And Prosper In A

"Deflationary Depression" (2002), "Socionomics: The Science Of History And Social Prediction" (2003), "Market Analysis For The New Millennium" (2002) and "Beautiful Pictures From The Gallery Of Phinance" (2003).

Discerning Patterns

Trader Garrett Jones, a 30-plus-year veteran in the money management industry, initially met Prechter in the early 1980s when both were occasional speakers on the same financial speaking circuit. Jones had been aware of market waves for years and had read the work of numerous technical analysts discussing price patterns. Jones noticed that things seem to happen in threes. The market would frequently make three advances and then have a correction. He also noticed that three advances would generally have a definable pattern.



The first pattern Jones observed was a series of three waves (each of which was interrupted by a [retacement](#) or corrective wave) in which the first wave was longest. In the second pattern, wave 2 was longest, and in the third, the last wave was longest. It is important to note that the middle wave is never the shortest wave in any viable pattern. What Jones realized in listening to Prechter was that the price patterns he had observed on occasion were actually the basic impulse waves discussed in Elliott Wave theory.

Jones credits Prechter with helping him better understand the intricate details of Elliott Wave theory and thus become a better trader. However, Jones still thinks the theory is most valuable for looking at the [macroeconomic](#) picture.

The Elliott Challenge

Prechter has had other notable successes in forecasting [Dow Industrial](#) moves

well before they occurred. In the Sept 1982 issue of *The Elliott Wave Theorist*, published one month after the end of a 16-year [sideways](#) trend, he correctly forecasted the great "lift-off" that year. It was the start of what many have called the big [bull market](#), although Prechter believes this bull market really began at the Dow multi-year low in Dec 1974.

But in his earlier book, "Elliott Wave Principle", co-authored with A.J. Frost in 1978, the two underestimated the top of the next wave five 'supercycle,' projecting a final target top at 2860. Those reading Prechter's *Elliott Wave Theorist* newsletter in 1982 were advised that the target had been revised to 3873-3885 and would be reached by 1987 or 1990. While in retrospect these forecasts fell far short of the ultimate gain, they were the highest published predictions of their day during a time when most people doubted the market's prospects.

When the '90s rolled around, Prechter was just as radical in the other direction, once again opposing the general consensus. But as we mentioned earlier, his book "At The Crest Of The Tidal Wave", which publicly called for the end of the great bull market in 1995, was nearly five years and many Dow points premature. Prechter subsequently wrote a chapter detailing why he missed a big portion of the bull market.

Garrett Jones is quick to come to Prechter's defense:

"It doesn't matter if you use EWT or other methods of technical analysis, it is important to be disciplined and admit when you are wrong. No one is right 100% of the time and Prechter has been quick to adjust his forecasts as new information comes in. He is a brilliant analyst, and he remains bearish to this day for reasons to do with his understanding of Elliott Wave and overriding market and economic fundamentals. He may not be sure exactly when the market will crash, but he knows it's coming."

As Prechter points out, the Dow nearly quintupled from 1974 to 1987. Who would have believed it would more than quintuple again by 2000? Such a move was unprecedented.

Plug and Play Elliott Wave Theory - Can it be Done?

[Ralph Nelson Elliott's](#) original work, "The Wave Principle", was published in 1938 long before the days of the computer. The fact that he progressed as far as he did with his observations and calculations without the use of a computer is an amazing feat in itself. Given the highly technical and analytical nature of developing Elliott Wave-based forecasts, would it not make sense to have computers do the difficult and tedious background work, thus freeing the trader to take the results and use them with far greater ease? Many traders think so, and while Prechter maintains the conviction that it will always take a certain amount

of human intervention to finalize an Elliott Wave forecast, his company is currently working on a computer application that will greatly streamline the process for clients. They are not alone.

In our next installment of this series, we'll examine an approach that takes specific parts of Elliott's principle and uses it for short-term [intraday](#) trading and longer-term end-of-day trades to greatly simplify trading decisions. It is a great way to discuss Elliott Wave theory and how it works in real-time trades.

The Best Of The Theory

For those not familiar with [Elliott Wave theory](#) its most basic tenet is that market movements are based on crowd behavior, which is seen as predictable given similar situations. Creator R.N. Elliott showed that these movements occur in a series of impulse and corrective waves.

For example, a bearish impulse swing consists of three waves down and two waves up (see Figure 1). Major [impulse waves](#) down (1, 3 and 5) can be further broken down into smaller five-part impulse down waves and corrective up waves, depending on the time frame over which the waves are observed. Bullish waves move in the opposite direction.

But this is where it starts to get more complicated. These smaller waves can be further broken down into more waves, which are interrelated by [Fibonacci numbers](#) (1, 1, 2, 3, 5, 8, 13, 21, 34, etc.), and on it goes. Wave analysis runs the gamut from supercycles lasting hundreds of years to sub-minuets that may last only a few minutes on an [intraday](#) chart.

One of the hardest things about trading Elliott Wave is its degree of complexity. To make it even more challenging, there are alternates to every potential move, which basically tells the trader that if this move doesn't go up, it will go down, but he or she will know that only after the fact! The rule of alternation also means that the corrective waves 2 and 4 will alternate. If a wave 2 down is a simple wave, then wave 4 will probably be complex, but not necessarily. Then there are X waves. These are waves that connect complex corrections.

It is easy to see why many novices shy away from using Elliott Wave and why many traders who have invested thousands of hours into it (and lost dollars trying to develop working trading strategies) finally abandon it altogether.

Starting with the End in Mind

To begin with, the trader must have realistic expectations. Most new traders spend the majority of their time looking for a system that has an unrealistically high win/loss ratio. Those still seeking a system that consistently produces more

than 50% winners in the long term haven't learned that surviving the market means knowing how to deal with losses. Such traders are looking for the Holy Grail, and it doesn't exist.

It's worth remembering what well-known author and professional trader Perry Kaufman had to say after years of exhaustive testing of various trend-following systems, some of which were discussed in his book "Trading Systems And Methods" (1998): "You can expect six or seven out of 10 trend trades to be losses, some small some a little larger."

And yet, Kaufman says that trend-following systems are some of the best trading systems around. In other words, trend-following systems have more losers than winners, but professional traders who use them make money consistently.

Renowned technical analyst John Murphy echoes this sentiment when he states that veteran professional traders experience winning trades 40% of the time. Granted, it is possible to outperform this record over short-term periods, but expecting any system to do much better over the long haul is unrealistic.

This means that for any system to be profitable long-term, money management is key. If a trading system cannot be profitable with more losses than winners, find another system or spend more time on money management. In short, losses must be kept small and profits must be allowed to accumulate. Unfortunately, the majority of traders do just the opposite and end up going out of business.



Figure 1 – Chart of Dow Industrial Average (\$INDU) five-minute intraday chart showing a short-term bear Elliott five-wave impulse pattern. On a one-minute chart, a further breakdown of smaller impulse and corrective waves could be observed. The colored bands are key areas of support, which are potential areas of reversal.

Applying this idea to trading Elliott, Figure 1 shows a five-minute chart of the Dow Industrial e-mini futures with a five-part impulse wave. Colored bands show the points of [support](#) (or [resistance](#) in an uptrend) and are where the trader looks to place a trade or adjust stops on current positions.

Programming Elliott to Trade

In the 500+ page manual for MTPredictor, author and creator of the program [Steve Griffiths](#) makes an interesting observation. He says there are basically three types of people when it comes to Elliott Wave.

- 1) Those who are new to the principle and still completely amazed at what it promises.
- 2) Those who are experienced but frustrated by their lack of success/consistency.
- 3) Those who have completely given up (sometimes after years of trying to make it work) and are frustrated by the whole experience.

To avoid falling into the third category, the modern trader needs to ask how Elliott Wave theory can be used to make money in today's markets. Is there a way of automating the analytical process using the complete theory, or is it possible to strip it down and isolate specific aspects of the principle to pick money-making trades? Becoming an expert but finding it impossible to make money is a waste of time.

As an Elliot Wave expert and a private trader with more than 17 years of experience, Griffiths asked himself the same questions. After spending years trying to make money on a consistent basis using alternate methods, he went back to Elliott Wave basics. He started with the premise that if Elliott Wave was to work in a program, he had to find setups that limited risk to a minimum that allowed profits to run. These setups had to be specific, identifiable and consistently profitable. If overall losses are greater than profits, what good are the longer-term forecasts for which Elliott Wave analysis is famous?

According to the theory, the strongest moves in a trend, whether up or down, are the impulse waves 1, 3 and 5. Of the three impulsive waves, the largest and most profitable is generally wave 3. Therefore, the ideal place to enter a trade is at the beginning of wave 3, which is the end of a corrective wave 2. Could the program be designed to hone in on these ABC corrective patterns (see Figure 2) that normally unfold in a wave 2 and provide the trader with a high-probability point of entry? Here is what Griffiths said in an Oct 2004 interview to discuss how the program came into being:

"In computer testing, we found that it was possible to enter with a minimum risk after an ABC had recently unfolded and the best were those that made up wave 2. By entering long trades very near significant support levels (and short traders near significant resistance levels), losses would be kept small if the trade turned out to be a loser. Winners had the potential to be very profitable indeed when the trader caught a wave 3 but the system had to be designed in such a way that the large gains were a bonus, not essential to the profitability of the system."



Chart by MTPredictor.com Copyright © 2005 Investopedia.com

Figure 2 – End-of-day chart of iShares Japan on quick breakout from an ABC corrective pattern buy signal.

This became Griffiths' goal: to design a computer program for his personal use that could search for ABC patterns that made up a wave 2 ending at or near significant support or resistance areas with a minimum risk/reward of 2:1. He could then choose only those that met specific risk/reward ratios according to his written trading plan. A more aggressive approach would be to take every trade generated by the program. A more conservative style allowed him to choose trades with a minimum risk/reward of 2.5 or 3:1.

After the first version of the program was completed four years ago, Griffiths realized that the application he had developed had commercial potential since there had to be others like him who were frustrated with the lack of success using

Elliott but knew that it was based on sound technical and crowd behavior principles.

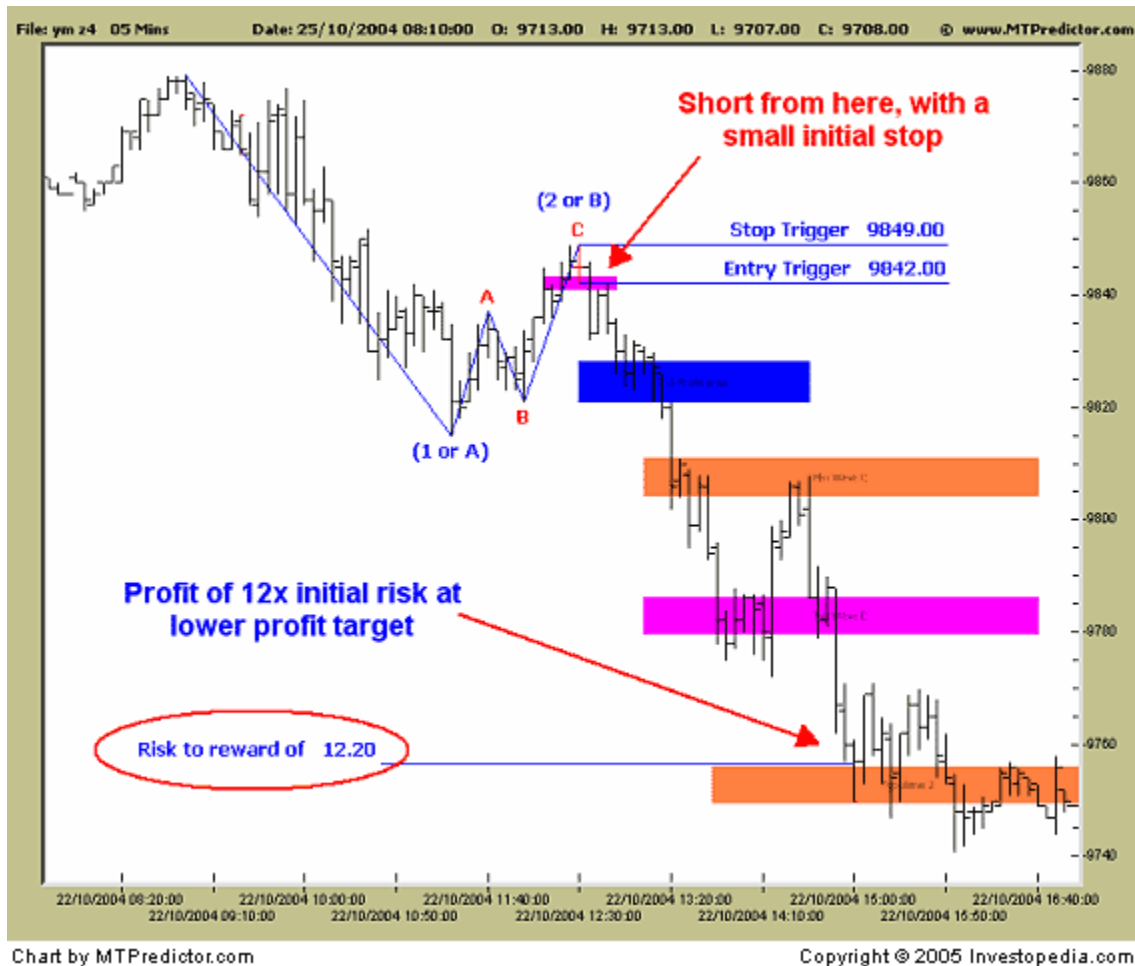


Figure 3 – An intraday trade on the Dow e-minis futures (YM) showing a very profitable trade.

Figure 3 shows the program in action. It is a chart of the five-minute Dow (YM) e-mini futures trade with the proprietary colored bands of significant support/resistance. These are generated with the use of automatic Fibonacci price clusters of varying degree and from multiple [pivots](#) that tell the trader where the highest probability of pauses and reversals should occur. As you can see, the trade was very profitable having moved well past the 'two to three times' profit area (blue band) to end the day at a new multi-period low resulting in a profit of approximately 12 times the initial risk (ignoring [slippage](#) and commission) at the lower projected profit target. While this is not a typical trade, it demonstrates what

can happen when the trader catches a strong wave-3 move.

For the sake of those unfamiliar with the program, MTPredictor includes a [record](#) of all trades the program has called (with a minimum risk/reward ratio of 2:1) since July 26, 2004. Since real money was not used and commissions and slippage not included, the trade results are hypothetical. It is not unusual to see more losses than wins, but what is important is the comparison of the number of points or dollars that were won to those that were lost. This is the acid test of whether a money management system is working.

For those who are interested, a software review of the program, "[Software Review: MTPredictor Real-Time 4.0](#)", was published in the Sept 2004 issue of *The Technical Analyst*.

The Key to Success

Here is what fund trader John McClure of [Equitrend](#) said when asked about profitability in an Oct 2004 interview:

"Profitability cannot be discussed without mentioning the other side of the equation: risk. The trap that many investors and traders fall into is to focus on the first part of the equation while not paying attention to the second. The professional money manager's goal is to improve profits by managing risk. Risk should be the most important part of the equation, not the other way around."

In other words, find a system that manages risk first and the profits will usually take care of themselves.

To borrow an old saying, there are many ways "to skin a cat" when trading. No single trading system will attract or work for everyone. This is especially true for Elliott Wave.

Finding specific parts of Elliott theory and transforming them into a workable trading system in which risk can be carefully controlled is one way to use the theory. And MTPredictor shows that you don't have to use the complete Elliott Wave theory to trade successfully. By taking small parts of the theory, using a computer and the right program, traders can now learn to trade Elliott without having to become experts in the theory itself. This is a good example of how one company has taken Elliott's brainchild and adapted it to work in the twenty-first century.

Shifting Into Trading Gear

In the preceding section in this series, we look at how one company isolated parts of Elliott Wave patterns and helped the trader identify them in both end-of-

day and real-time trading situations. In this section, we talk to an experienced trade systems designer who has researched the challenge of implementing Elliott Wave theory by computer since the mid-1990s.

The Designer

[Murray Ruggiero](#) is no stranger to trading system users. He is the author of a number of books on the topic - including "Cybernetic Trading Strategies: Developing A Profitable Trading Strategy With State-Of-The-Art Technologies" (1997) and "Traders' Secrets Psychological & Technical Analysis: Real People Becoming Successful Traders" (1999), the *Inside Advantage* newsletter, as well as more than 70 articles in various trading publications. His work is referenced in books by such prominent authors as Larry Williams, John Murphy and Perry Kaufman.

In his book "Trading Systems And Methods" (1998), trading system specialist Perry Kaufman presents four of Ruggiero's suggestions for trading Elliott by machine:

- 1) Enter wave 3 in the direction of the trend.
- 2) Stay out of market during wave 4.
- 3) Enter wave 5.
- 4) Take countertrend ABC at top of wave 5.

Kaufman also says: "When a wave appears in two time frames such as both daily and weekly charts, the likelihood of the success of this formation increases." Without some sort of confirmation, the risk of being on the wrong side of the trade increases.

Accuracy is Not Key?

The problem with trading Elliott concepts by computer, Ruggiero believes, is that the designer must reduce the highly subjective aspect of the theory into quantifiable, specific components. The goal is to find those areas of the theory that work best and then tell the computer how to find them for you.

To Ruggiero, the key is not in trying to "teach" the machine to count Elliott Waves accurately because, like Robert Prechter, Ruggiero still believes that it takes a degree of human intervention to apply the highly complex aspects of Elliott Wave interpretation. This need for human involvement is due to the fact that Elliott Wave has been traditionally used in longer-term forecasting.

But traders are more interested in much shorter time frames, and it makes sense that a system that is to trade intraday has a different focus than a system looking for a target that is weeks, months or years away.

"There is a difference between today's count and the true count," Ruggiero says.

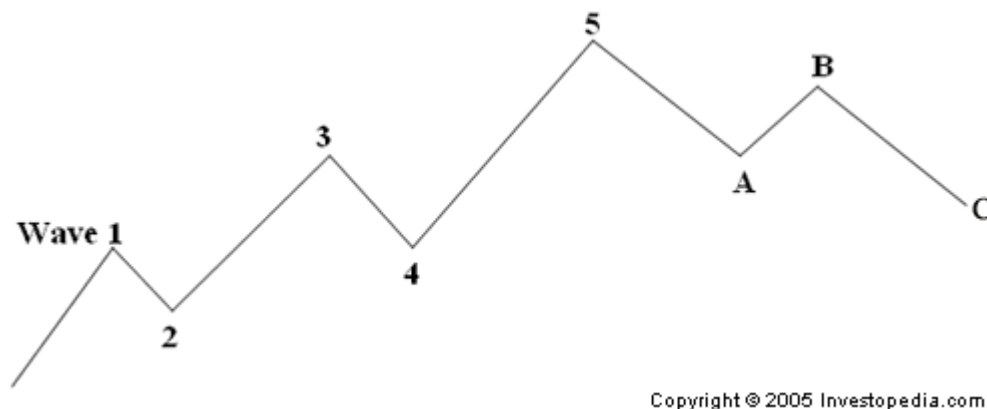
"The key to trading Elliott lies in not getting hung up on the correct wave count, but rather in determining the count that has the least penalty for being wrong."

Finding the correct count requires time. There are nine different wave patterns or degrees of trend in Elliott Wave ranging from the grand supercycle lasting hundreds of years to the sub-minute degree covering a few hours. Elliott practitioners can spend days arguing over correct wave count but, in many cases, the number will not be confirmed until after the fact.

However, the trader is not interested in whether the chosen [index](#) or [future](#) is the first or third wave but rather what his or her risk of being wrong is versus the potential reward. A trader is really looking for an entry price that is close to support, which, if broken, will nullify the pattern and result in a small loss but, if correct, will return three to five times the amount risked.

For example, if, in the complete Elliott Wave below, the trader mistook the bottom of wave 2 to be the bottom of wave 4 and entered a long trade, he or she would catch wave 3 instead of wave 5 and still make a good profit because both waves 3 and 5 are generally powerful up moves. In certain cases, a wave 3 is the longest wave in the pattern.

Now let's say the same trader mistook wave B for wave 1, and then entered a long trade at the next pause because he or she thought it was a new wave 3; this pause would've actually been a continuation of wave C, making the trade a painful experience, especially if wave C was incomplete.



In Figure 1 below, we see an example of a wave pattern that was identified by the computer as an ABC wave but was actually part of a much larger corrective wave. It worked out well for the trader, who, instead of earning the expected profit of two- to three-times risk (5.5 points), made more than six times that amount.

The point is that it doesn't really matter if the trader gets the wave count wrong.

As long as he or she determines the primary direction of the trend, properly differentiates between the primary and corrective waves and uses tight stops and realistic profit targets, trades can still be very profitable.



Figure 1 – Five-minute chart of the Dow Industrial Average showing a profitable trade and the Elliott Wave Oscillator in the lower window.

Elliott Wave Oscillator

What can an Elliott Wave computer trader use to gain greater insight into where he or she is in a wave? Create an Elliott Wave [oscillator](#) (EWO), according to Perry Kaufman. The EWO is simply the difference between a five-period and 35-period [simple moving average](#), which in Figure 1 is shown as red and blue moving average lines.

In *Metastock*, for example, the formula for the EWO is simple. To get the display shown in Figure 1, plot the formula below as a histogram:

$EWO = \text{Mov}(\text{Close}, 5) - \text{Mov}(\text{Close}, 35)$.

Note the magenta lines in the main chart and those in the lower EWO window slanting in the opposite direction. This shows clear divergence between price and the Elliott Wave oscillator - a sign that a change in direction is imminent.

Kaufman says that a new upward trend is identified when the EWO makes a higher high than the previous EWO high. For example, in an uptrend, a wave-3 EWO high would be greater than a wave-1 high.

As we see in figure 1, the EWO, like any good oscillator, can also be used as a warning of [divergence](#) and the change in direction. After watching the EWO for a while, you will begin to see the pattern. In an uptrend, the EWO will put in a series of higher highs after which it will drop below zero, which will be the ABC corrective pattern. A new series is then about to begin.

Trades confirmed by an oscillator are lower risk than those without confirmation. When the oscillator begins to put in a series of lower highs while price puts in higher highs, get ready for a trend change.

In Summary

Rather than try to "train" the computer to perform the complex and subjective task of accurately identifying all aspects of the Elliott Wave, it is far more feasible to isolate patterns that are close to each other and places where the penalty for being wrong is minimized.

This means identifying the primary trend, taking trades in this direction and setting tight stops in case you have made an error in your analysis. It won't matter that much if you mistakenly identify one part of the wave for another as long as they are similar parts in the wave cycle.

To help confirm the proper entry and exit points, the Elliott Wave oscillator can be used to choose higher highs and higher lows in an uptrend, or lower highs and lower lows in a downtrend. Divergence between the oscillator and price is also a very useful tool for trade confirmation. Furthermore, wherever possible, confirmation in different time periods - for example, a five- and 15-minute chart for short-term traders, or a daily and weekly chart for longer-term traders - further increases the chances of a profitable outcome.

With a basic understanding of the theory and a bit of practice, it won't be long before you are using what you have learned to enhance your trading acumen.

Solving the Probability Problem

"Pride of opinion has been responsible for the downfall of more men on Wall Street than any other factor."

Charles Dow

Without a doubt, the greatest drawback of using Elliott Wave theory (EWT), and the reason most traders avoid it, is its high degree of subjectivity. Even the most experienced Elliott experts can have trouble agreeing on wave counts and forecasts on the same issue, index or [commodity](#). Where there is subjectivity, there is uncertainty. Overcoming this uncertainty requires the guidance of solid probabilities determined by statistical analysis. Let's take a look at a development that, through computer power, has helped take the subjectivity out of the Elliott Wave theory.

Adverse Effects of Opinions

As all successful traders have learned, solid rules are essential to long-term success. The possible variations in deriving an Elliott Wave count while either strictly or strongly adhering to the original rules make it hard to know which count is best. Ultimately, the analyst chooses the count with which he or she feels most comfortable, but that is often based on little more than an educated guess or past experience. As such, the analysts may be prone to get "married" to the opinion, even when logic might dictate otherwise.

Opinions never hurt when it comes to the markets until there is money at stake. If the market goes against the trader, unquestioning loyalty to an opinion can be very costly. Fear of being wrong, combined with pride of opinion, is a deadly handicap in the trading business; emotional gremlins are more responsible for traders' failings than any other single factor.

In his book, "Trading In The Zone" (2000), trader Mark Douglas helps traders break the emotional habit. All great traders who have sustained success have learned to think in probabilities, realizing that trading is nothing more than a numbers game. Successful traders have made it a habit to make decisions only if they know the [risk/reward ratio](#) and if they have [backtested](#) and recorded the past success of their system. Emotions don't control these decisions. Probabilities do.

Until the late twentieth century, however, Elliott traders did not have the luxury of knowing the precise probabilities of success or failure of a forecast. Because of the complexities of Elliott Wave, there was no way of knowing what to expect with any degree of mathematical confidence from even a single Elliott Wave

pattern, let alone a complicated one spanning a number of years. No public databases providing that information were available.

Putting Elliott to the Test

In 1994, a small team from Perth led by Rich Swannell began designing Elliott Wave computer programs for traders. Swannell was a programmer first and trader second. Very few in the world of trading are good at both.

During the early years, the team consulted with Elliott veterans, conducted intense research, and developed what Swannell claims was the world's first comprehensive software program designed to analyze price data using the rules and guidelines of Elliott's theory. The problem with the software was that it was based on observations and not an exhaustive statistical analysis of wave reliability. And, while results from the software were respectable, without probabilities the trader was still trading blind. How could a way be found to overcome this weakness?

The team came up with a novel solution. Swannell developed a screen saver in 2001 that would work in the background on the computers of more than three thousand volunteers. While not being used by their owners, these machines would be scanning a universe of stocks, commodities and indexes to search for and analyze Elliott Wave patterns. The goal was to determine once and for all which patterns worked, which did not and even whether the Elliott Wave theory itself had sufficient merit to trade it with confidence. It was all based on mathematical probabilities.

After eighteen months and hundreds of thousands of hours of computer time, the team had enough data to start analyzing it. For those interested in more details, Swannell wrote a book about the experience, "Elite Trader's Secrets: Market Forecasting With The New Elliot Wave System" (2003); it includes a good analysis of Elliott patterns. Here is a summary of what they found:

1. Not only did the Elliott Wave theory prove to be statistically sound, the research was able to generate the probabilities of a forecast being correct. In other words, the trader could now know the chances of a wave pattern and the resulting forecast with a low margin of error (statistical significance).
2. The most common Elliott Wave patterns were often significantly different in both shape and frequency than the previous conceptions of them. Some patterns that were previously believed to be reliable did not work often enough to be used with any degree of confidence.
3. The team confirmed Murray Ruggiero's finding that a correct wave count is not the most important factor in trading. Even with the help of a good program, all Elliott forecasts are, at best, an educated guess: a trader can never be certain because there is always a larger pattern that cannot be

- included in the analysis unless he or she goes back to the beginning of time. Swannell's team found that since many alternate counts result in similar forecasts, this problem of possible inaccuracy is not as critical as many previously thought. As long as a count is arrived at logically, adheres to the rules and is confirmed over various time periods, it doesn't matter what the larger degree (next largest wave pattern) is. In Swannell's findings, the most probable scenarios gave exactly or at least very similar forecasted results. This finding is crucial to a trader's success and means that, as Ruggiero says, the count is of less importance than the penalty for being wrong, which is the loss on the trade.
4. By performing forecasts in various time frames, the team separated the issues that worked from those that didn't. Forecasts for those that exhibited no consensus over various time periods were deemed unreliable (see our example below for a more detailed explanation). The probability for failure in most cases was greater than the probability for success, so why take the chance?

Of the thousands of equities, indexes and commodities tested, Swannell's team found that in about 65% of the cases, Elliott Wave theory proved too unreliable to be used to trade with any degree of confidence. In other words, using the theory to trade the instruments included in this 65% would prove a losing proposition. It means that traders should limit their focus to the 35% that proved to be viable trading candidates.

But why did only about one-third of the candidates work using Elliott? It has to do with the basis of the Elliott principle, which quantifies market crowd behavior. Elliott Wave theory works best in equities that (1) have lots of volume ([liquidity](#)) and (2) move according to key forces of fear and greed on the part of many participants. When a security is not prone to this crowd behavior and is controlled instead by a few strong hands, Elliott patterns begin to break down. Issues traded by a few are more subject to manipulation and control and, therefore, are more difficult to forecast.

Elliott warned us that his theory worked best on indexes and very liquid securities, so Swannell's finding was not all that surprising. But now the notion was proven and quantified and a list of trading candidates was identified. In the process, a large amount of subjectivity and uncertainty was removed. All this information was now stored and available in a large database for immediate computer reference.

Coding and Applying the Lessons Learned

Through ongoing research and data from the screen saver program, Swannell's team further discovered that certain techniques, when consistently applied, generated impressive forecasting results. A new proprietary indicator based in

part on the Elliott Wave oscillator also greatly assisted the trader in recognizing and confirming key reversal points.

The new discoveries were in part based on a prime tenet of [technical analysis](#) that if a pattern or method of analysis works in one time frame, it should also work in others. Moreover, the more time frames in which patterns confirm each other, the higher the probability that a forecast will be correct. For example, if a pattern within daily data agrees with one found in weekly data, the trader can have greater confidence in the pattern.

Swannell's team also found that a pattern confirmed in the same time period (that is, one day) over multiple date ranges was much more reliable. For example, using a starting point of the Oct 1987 low, let's say that we find an impulse wave consisting of three up-waves and two down- (corrective) waves in an uptrend. If this impulse wave agrees with patterns we find using a low from 1998, a low from 2002 and one from 2003, the reliability of a forecast made using these four time periods is substantially higher than one made in only one or two time frames. This confirmation of patterns has become the basic premise of forecasting using the program called the Refined Elliott Trader.

Taking the process one step further, the software Swannell's team developed rated each pattern, and those exhibiting a rating of 80 or more were reliable enough to use in a forecast. Those with scores above 100 were most reliable.

Let's look at an example analyzing the [S&P 500 Index](#) using end-of-day data.

The following charts show how the program is used to produce market forecasts. In this example, head trader Mark Lindsay takes us through the analysis process of locating confirmation Elliott Waves over four different time periods. We are looking for parts of the same wave patterns. The more closely they confirm each other, the more confidence we can have in the forecast. .

The Refined Elliott Trader looks for statistically significant matches and rates each pattern it identifies. Note on the left-hand side of each chart the list of numbers showing the rating of each pattern. We are looking for ratings (at the top of the list) of 80 or better. A rating of 100 is excellent and means that the pattern on the screen shows a strong correlation with similar patterns found in the database.

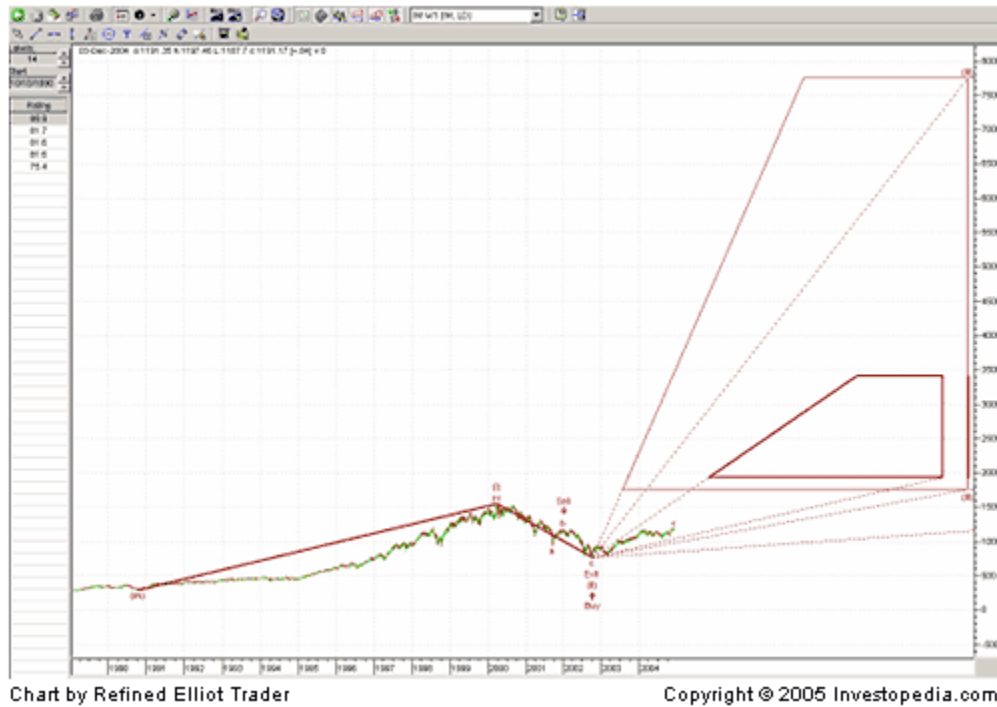


Figure 1 – Long-term chart of the SPX from 1990 to 2004 showing large impulse wave and forecasted price using RET.

In Figure 1 we start with a chart going back 15 years from 2004. It shows the longest-term chart with an impulse wave starting in late 1990. Wave 1 peaks in mid-2000, and wave 2 bottoms in Oct 2002. Wave 2 is a corrective ABC pattern. According to this chart in 2003-2004 and going into 2005, we were in a wave 3. The dark red rectangular pattern, which has a target area between 2000 and 3500 (indicated by dark-red vertical line) is the longer-term forecast.

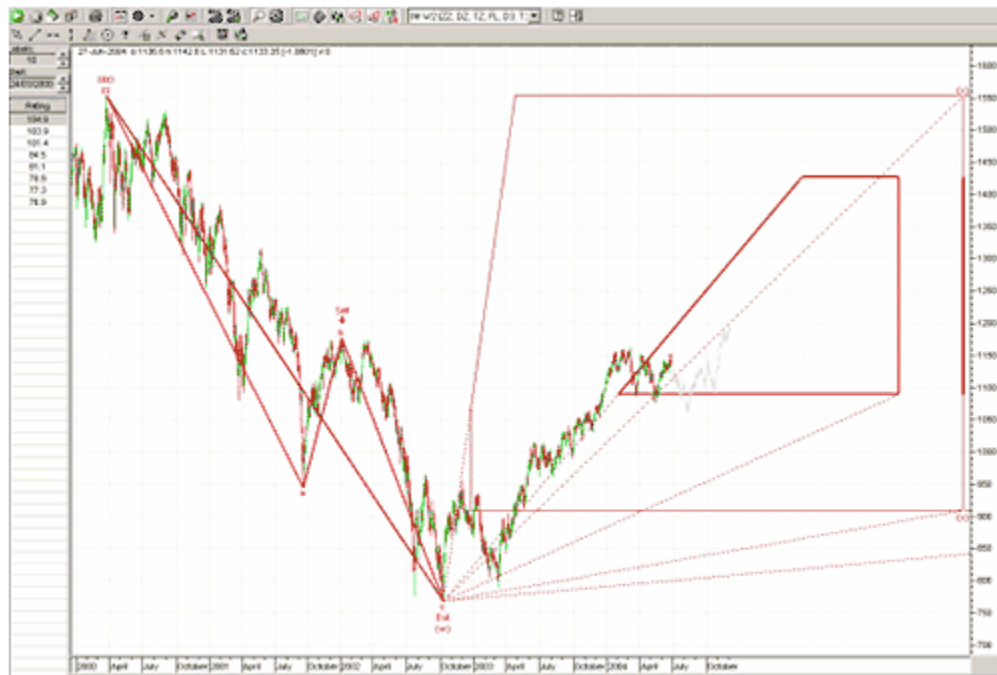


Chart by Refined Elliot Trader

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Figure 2 – Second shorter-term chart of SPX focusing in on the same impulse pattern shown in figure 1.

Next we isolate the wave 2 from Mar 2000 to Oct 2002 (figure 2) to see the pattern in more detail. Remember, we are looking for pattern confirmation in each step of the process. As we take a closer look at each pattern, we see each wave in greater detail.

In Figure 2, we take a closer look at the period from late 2000 to late 2003 and isolate impulse wave 3. Impulse waves occur in waves of five while corrective waves like the one we see in figure 1 between 2000 and 2002 occur in waves of three. Also note that forecasts generated in each chart confirm one another. This is important if the trader is to have a high degree of confidence in the ultimate forecast.

In figure 3, we focus in closer, looking at the period from Feb 2003 and Dec 2004 showing impulse wave 3 in greater detail. It shows the first part of wave 3 followed by a 'double 3' (sideways corrective wave) with the start of a smaller wave 3 (at the buy arrow).

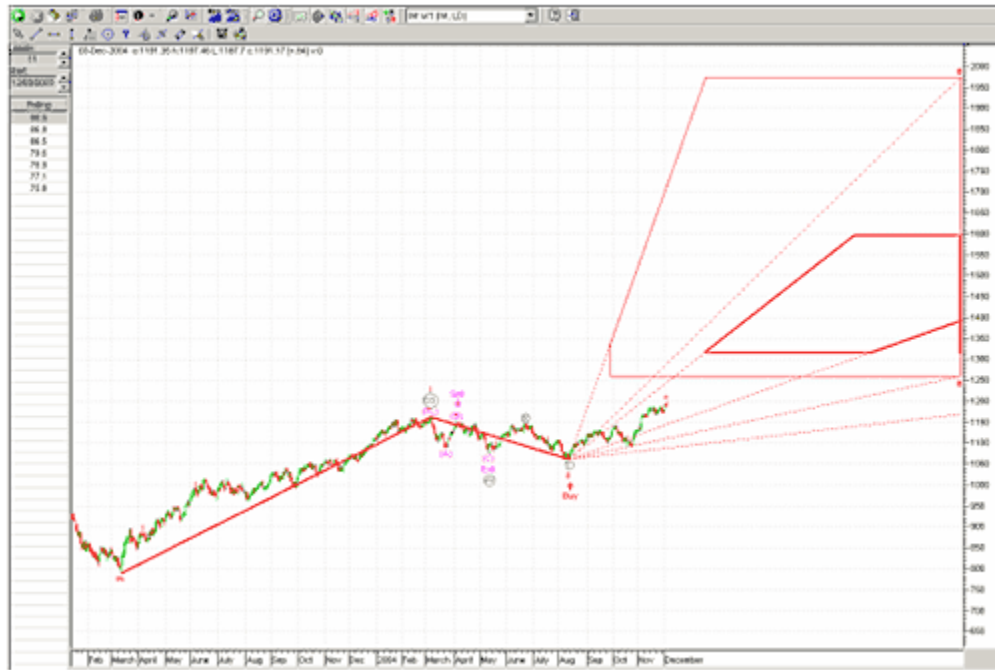


Figure 3 – Third shorter-term chart of SPX gives a closer look at the impulse pattern showing a similar forecast to the above charts.

The final screen (Figure 4) shows the latest wave 3 from Aug 2004 to Dec 2004. The smaller parts of this wave consist of even smaller impulse waves 1, 2, 3, 4, and what looks to be the start of an impulsive wave 5 with an immediate price target from Dec 3 between 1220 and 1290.

This program also produces expected time ranges for each target (not shown in these figures).

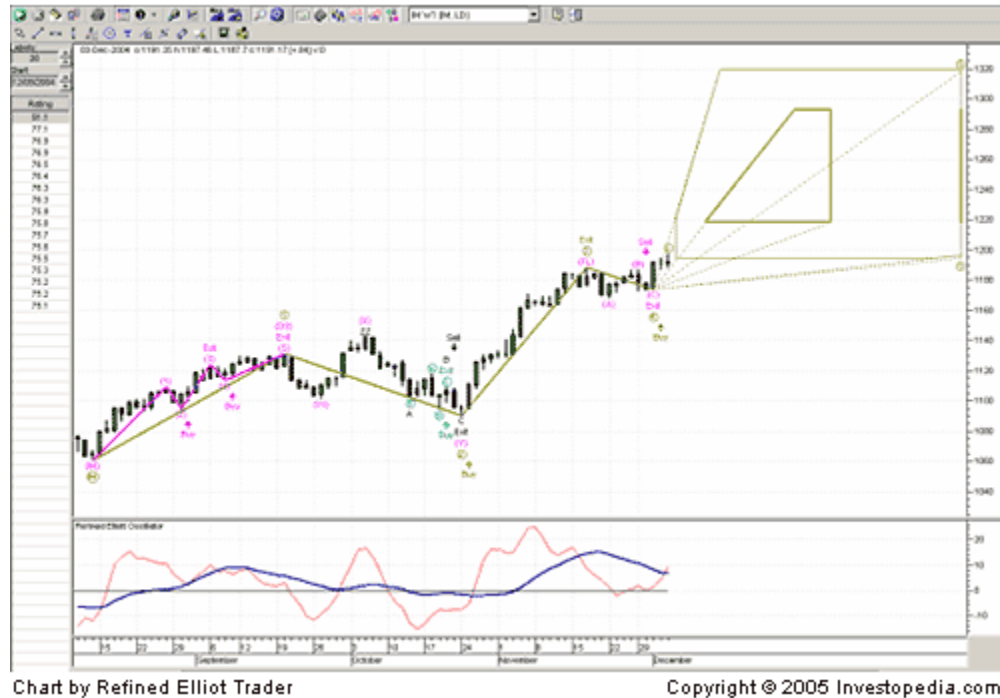


Figure 4 – Smallest time frame chart of the SPX showing end of impulse wave, forecasted price and the proprietary Refined Elliott Oscillator (lower window) used to help traders pick potential entry and exit points.

It is important that the waves found by the program in each of the four charts confirm one other. If the overall pattern in the first chart is not found in the following three charts in a lesser degree, something is wrong and it's time to go back to the drawing board. If after performing a detailed search, the patterns don't agree, it's better to discard the prospect of trading the security than risk a bad trade.

Challenges and Solutions

The program developed by the Australian team may have solved a number of the challenges that existed, but it is not for those looking for an effortless trading system.

As a word of warning, the Refined Elliott Trader demands a thorough understanding and recognition of Elliott Wave patterns. A minimum of 50 hours is required to learn the 60 modules in the first level Elliottician course and then pass the four wave-recognition speed tests. Those with a phobia for learning or with little interest in probing the nuances of Elliott Wave theory are advised to look elsewhere.

But in the final analysis, all Elliott traders should take heart in the findings of this research even if they have no interest in using a computer program. It proves

mathematically that the theory developed more than seventy years ago by R.N. Elliott is based on sound principles of market behavior. Actions taken by investors in the past do have chart pattern ramifications in the present, regardless of the reasons for these actions. The scope and duration of these reactions can be used to trade or invest longer term with greater confidence.

Conclusion

Here are some principles about Elliott Wave we discovered in this tutorial:

- The [Elliott Wave theory](#) requires a high degree of subjectivity, which is one reason why using the theory can be so problematic - finding agreement among Elliott Wave practitioners can be rare.
- The most basic tenet of Elliott Wave theory is that market movements are based on crowd behavior, which can be predicted. Traders, however, may often discern a market move only after it has occurred.
- [Robert Prechter](#), leading expert of Elliott Wave, has made some accurate forecasts using the theory, particularly in the '70s and '80s. Specifically, he forecasted the crash of 1987. But Prechter's record at the end of the twentieth century has not been so perfect: his book "At The Crest Of The Tidal Wave" (1995), calling for the end of the great bull market in 1995, was nearly five years and many Dow points premature.
- Trading with Elliott Wave means applying a principle that is true for all trading in general: expectations must be realistic, and money management is key to profitability over the long-term; that is, losses must be kept small and profits must be allowed to accumulate.
- One way to use Elliott Theory is to find specific parts of the theory and transform them into a workable trading system in which risk can be carefully controlled.
- Approaching Elliott Wave may also mean putting less emphasis on the correct wave count, and more attention on determining the count that has the least penalty for being wrong. A trader can still be profitable if he or she determines the primary direction of the trend, properly differentiates between the primary and corrective waves, and uses tight stops and realistic profit targets.
- Computer power has helped take the subjectivity out of the Elliott Wave theory. Intense statistical analysis of wave reliability has proven mathematically that the theory developed more than seventy years ago by R.N. Elliott is based on sound principles of market behavior.
- Computer programs such as the Refined Elliott Trader, which is based on the premise that a pattern is reliable if it is confirmed in the same time period (that is, one day) over multiple date ranges - may have solved some problems associated with using Elliott Wave in trading. Using the computer program, however, still demands a thorough understanding of Elliott Wave patterns.

