

Underlying Structure of Markets

Welcome to twenty-first century technical analysis! In this work we are going to shatter myths, gore sacred cows, and finally build a better mousetrap. For the past several hundred years, technicians have relied heavily on price and volume studies as the most important factors on a price chart. Don't get me wrong, these are very important. However they do not give us a complete picture. Time studies are the least understood, yet are a critically important element in technical analysis. For this new edition we are going to include some of the work of W.D. Gann and his most important discovery. So let me say that, while we are in twenty-first century technical analysis, the roots lie in work done 80 to 100 years ago that was ignored by the majority of the trading community. Even today on the three most important media outlets that give us wall-to-wall coverage of markets, the time element is still ignored.

The first edition of this book was released several months before this pattern completed. As early as April 2007 we had been telling our regular readers at the time that a very important pivot was coming in October, as seen in Figure 1.1. The essence of the book was to teach people how to recognize patterns such as this. Had anyone recognized and understood the significance of this market turn they could have taken appropriate action to protect themselves. We revisit this Dow episode later in the book as well because I told

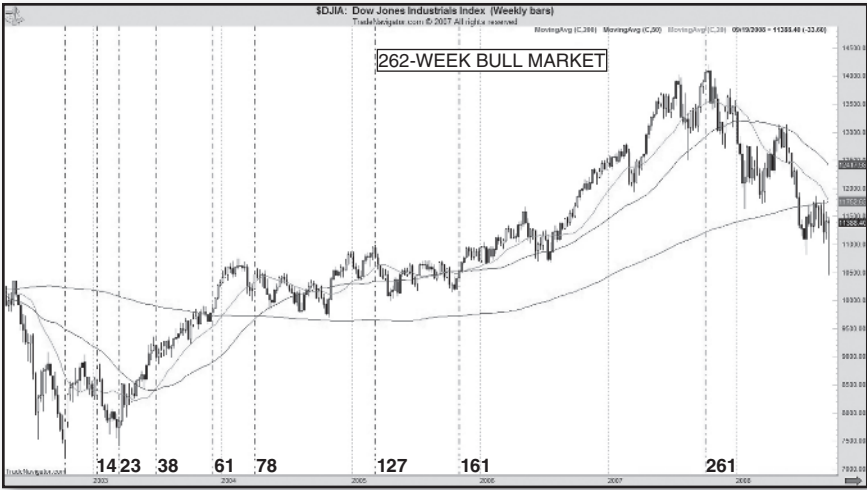


FIGURE 1.1 Dow Bull Market 2002 to 2007

people the turn coming in October 2007 could be the most important in that entire decade. I was only partially right. The peak of 2007 turned out to be the most important turn in our generation. It ended a five-year bull market, setting the table for the worst financial crisis since the Great Depression. The timing principles in this book will teach you how to recognize events such as these. One of the most historic was the eye of the storm created by that 262-week high. As we see, the Dow topped on October 11 and 12 in 2007. Exactly 233 trading days later in Figure 1.2, was the Lehman Brothers bankruptcy,

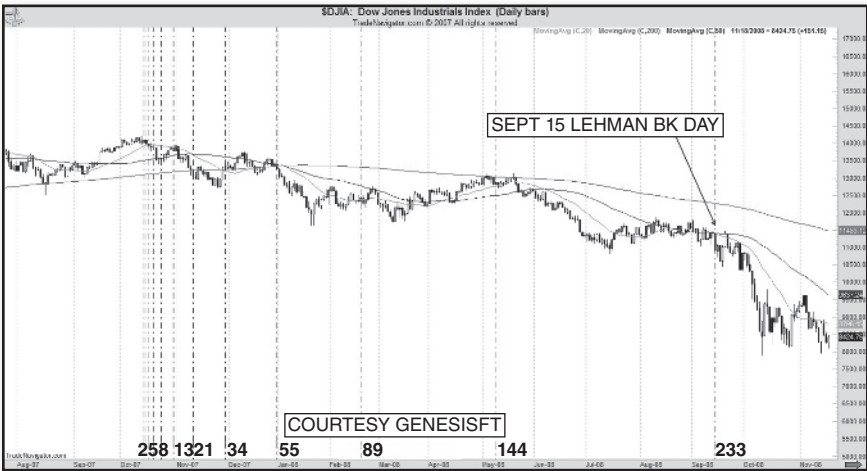


FIGURE 1.2 Lehman Event

which for all practical purposes was the initial acceleration point to the 2008 crash. As it turned out, the NDX/NASDAQ topped out on October 31, 2007, roughly three weeks later.

Roughly three weeks after that was the TARP vote in Figure 1.3, which was 233 trading days off the NASDAQ top. It may have been the first time in history that a crash materialized at exactly 233 days off one peak and went into overdrive 233 days off the other peak. If this is really the case it's because of the unique properties of the 2007 top. Most people don't know this, but this is the kind of symmetry we are going to teach you how to recognize, along with the opportunities they represent. Also they will help you recognize when an event like this is not materializing. This information was not only valuable to the trading and investing community but the average person who saw his 401(k) decimated as well. If this doesn't prove the validity of precise market timing windows, nothing ever will.

Traders comprehend targets based on price and volume very well. However most people have very little idea of the real reason why a trend changes. Do you ever wonder why a chart will hit a certain price target and linger for days until finally one day it drops? Why did it drop on this day as opposed to that day? This area has always been one of the biggest problems for traders. The first edition made a serious attempt to close that gap. This edition takes it a step further. We start here with the symmetry from the greatest crisis in our lifetime and find the market left clues. Hopefully you will continue with an open mind so you can have a greater understanding of why price action



behaves the way it does. It is a wonderful world of possibilities. But there has to be a basis for understanding patterns.

There are different methods of technical analysis. Dating back to the 1920s and 1930s, Richard W. Schabacker wrote several books that were based on Dow theory. He hypothesized successfully that certain patterns that showed up in the major averages were also relevant to individual stocks as well. His brother-in-law Robert D. Edwards continued his work. Many in our generation are familiar with the technical work of Edwards and his partner John Magee (Magee ix-xv). Together, they are considered the fathers of modern technical analysis. As we know, technical analysis is a snapshot of market participants' collective behavior. Since we are dealing with human emotions, these patterns of collective behavior are repeated over and over. They can be recognized and then utilized to anticipate future moves in the markets. These patterns can be further broken down into naturally recurring sets of waves and calculations.

The basic structure of financial markets lies in a catalogue of repeatable patterns uncovered by Ralph Nelson Elliott and refined over the years by other well-known Elliotticians including Robert Prechter Jr. The Wave Principle represents a good pattern-recognition system. These waves are like snowflakes. No two patterns are ever alike, but they all have repeatable tendencies. Inside these waves are universal calculations that are measured in terms of both price and time. These measurements are driven by Fibonacci relationships. Much of the research on the time element is derived from the work of W. D. Gann, who should be considered the founding father of modern time studies. From Gann, modern Fibonacci analysts have done an excellent job of simplifying the methodology so traders can practically use it as an everyday discipline. When you combine Elliott and Gann, you have the capability of taking subjectivity out of Elliott, which is the method's main criticism. But they are rarely used together.

The Elliott methodology relies heavily on the Fibonacci relationships to the point where one really can't use one without the other. Since the Wave Principle relies on Fibonacci calculations it would make sense that those who use Fibonacci retracements would recognize patterns in terms of Elliott Waves. The first edition of this book incorporated the time principle into the Fibonacci/Elliott ways of thinking as well as traditional technical analysis. This edition introduces the concept of price and time squaring, Gann's most important discovery. In this edition we are leaving much of the first edition's Elliott/Fibonacci work here as many of you are more familiar with it, but taking it one step further and introducing enough Gann you can use now

and it won't take years to figure out. The first edition reintroduced the Lucas series of mathematics. French mathematician Edouard Lucas (1842–1891) discovered this series, which is a derivative of the Fibonacci sequence. Lucas was the guy who gave the Fibonacci sequence its name. It is mentioned briefly in other books. It is here where this series is presented in great detail. The author is certainly not the first to present Lucas to the financial community. However, it has a greater influence on many financial charts in all degrees of trend than many realize, as we will show you, and has been greatly misunderstood and greatly understated. Lucas does not supersede Fibonacci, it complements it. According to the research presented here, you will see how often it does. The purpose of using the time dimension is to gain a very important tool in the pattern-recognition game.

A pilot wouldn't think to ever take off in a plane that was not equipped with instruments that could fly or land it in bad visibility. As challenging as financial markets are, using technical analysis as a pattern-recognition system without the time dimension is like attempting to land a plane in zero visibility.

Before going on instruments we need to navigate in good weather. Basic navigation of financial markets begins with an understanding of the Wave Principle as one underlying structure of all financial markets. The Wave Principle gives the trader a good start at pattern recognition. Those of you trained in the Edwards and Magee school of technical analysis can compare and contrast the two methodologies. This book uses the Wave Principle only as a guide because it is fairly complex and not totally reliable in real time. It's a guide because of the subjectivity of the waves. What we'll cover here in contrast to what is presented in pure orthodox Elliott books is the ability to use the Wave Principle as a GPS. We don't want to totally rely on the waves as iron trading rules for entry and exit.

When we look at the waves we can have an idea of where we are in a trend. We can also have an idea if we are in the main trend or in a move that technically corrects that trend. Sometimes a correction is so large in relation to the main trend that we really don't know if the larger trend has changed. This is one of the black holes in the Wave Principle that this book intends to clear up.

There are two basic patterns of waves. The first are known as impulse waves, which is the prevailing larger-degree trend. The other is known as corrective waves, which move counter to the main trend. Each has their own distinctive set of characteristics. In this chapter I will only cover the basics as a review of materials you may have read elsewhere. Later on, I will

show you how to recognize an impulse or corrective wave by exclusively understanding the number sequences in all of these waves.

■ Impulse Waves

Impulse waves have their own unique characteristics. The larger prevailing trend is considered to be an impulse wave and you can recognize them as they move in a five-wave sequence. They can also move in a 9- or 13-wave pattern. There are only three iron laws of impulse waves according to Prechter (30).

1. Wave three is never the shortest wave.
2. Wave two never retraces more than 99 percent of wave one.
3. Wave four does not overlap the territory of wave one.

Let's clear up some of the confusion surrounding these rules. From my experience in dealing with the Elliott community over the past few years, some think the third wave is always the largest wave. This is simply not the case. Generally speaking, the tendency is for wave three to be the largest wave, but the rule is it can't be the shortest wave. If you are counting waves and the middle wave is the smallest, something else is going on. That particular wave might be an extension of the first wave, but it isn't a third wave.

The other controversy surrounds fourth waves. According to some in the Elliott community, they do not allow for any overlap of the first and fourth waves, but I've seen many instances of where the fourth wave touches, grazes, or slightly overlaps wave one. I think you need to apply common sense to the situation. If you have a fourth wave that makes an obvious violation into first-wave territory, it isn't a fourth wave. If you've had a first wave, a retracement second wave, a third that makes a decent advance, and then you have a pull-back that grazes first-wave territory before turning up, I think you can make a case for it being a fourth wave.

Another characteristic of impulse waves is the Rule of Alternation. This is not an iron law but rather a guideline. The Rule of Alternation suggests that if the second wave retracement takes the form of a sharp, the fourth wave is likely to be a flat correction. Other ways this rule manifests itself is when the first wave is the largest wave, the fifth wave will be the smallest. In a larger move, if one set of five waves has the third wave as the extension, the next round will either have the first or fifth wave as the extended wave (Prechter 61).

Extensions are another important characteristic of impulse waves. This means that of waves one, three, or five, one will be considerably larger than the other two. Extensions are hard to count while they are in progress, and the exact count is not readily apparent until late in the move. The time cycles clear up much of the confusion and allow the trader or analyst a better road-map to determine where we are in the bigger scheme of things more easily.

There is a set of common relationships in an impulse sequence that is Fibonacci based. The most common tendency is for the third wave to be the extended wave and many times it will measure 1.618 or 2.618 times the length of wave one as measured from the bottom of wave two (Prechter 125-138). In lower probability cases, the third wave may even measure 4.23 times the length of wave one.

When the third wave is the extended wave, the tendency is for waves one and five to have a 0.618/1.618 relationship to each other. In rare cases, the fifth wave can be a 2.618 extension of wave one. Recently, we had a situation in the XAU where wave five was a 2.618 extension of wave one and wave three was not the shortest wave.

When a fifth wave extends, the most common relationship is it measures 1.618 times the length of waves one through three, with wave one being the smallest wave. When wave one extends, it will usually measure 1.618 times the length of waves three through five, with wave five being the smallest wave.

In rare cases we can have a double extension where waves three and five are both twin 4.23 extensions of the first wave.

The best way to recognize an extended wave is to observe how the progression begins. Once we get a new trend we'll have a first wave up, a retracement, and another leg up. If the second retracement violates into the territory of the very first wave in the sequence, we know by the iron law of fourth waves, that this can't be a fourth wave. It must be the start of an extension or larger move. How do we know that it is not a corrective move? Watch the volume patterns. At all times we will use other indicators to confirm a wave count. If we are in an uptrend, the down days compared to the up days will be lower volume on average. For instance, if we've been through a long down trend where sentiment became unusually negative, the trend going in the new direction will start to build decent volume days and the pullbacks will be of lighter volume. A lighter volume wave that slightly overlaps a first wave up is likely to be corrective, counter to the new trend and part of an extension going in the new direction. The time dimension will also give us a good clue as to the underlying direction and I'll cover that in a later chapter.

■ Corrective Waves

Corrective waves have their own unique set of characteristics that differentiate them from impulse waves. A wave is corrective when it moves counter to the trend. There are two types of corrective waves. One family consists of sharp corrections and the other family is considered flat corrections. You may consider triangles to be another subset, but technically they are part of the flat family.

Sharp corrections normally fall into a five-three-five pattern of waves. They are labeled differently from impulse waves and use letters as opposed to numbers. An ABC correction will contain five small waves moving counter to the trend, followed by a small sideways or triangle correction, followed by five more waves. The way to recognize these waves is they violate the overlap rule where the fourth wave falls deep into the territory of the first wave. The best way to recognize a sharp correction is they are distinguished by being very choppy. If you don't understand waves at all and have no real plan to do so, the best way to understand corrective moves is by their choppiness or lack of structure. Corrective waves are also characterized by an average lower volume than the prevailing larger-degree trend moving in the other direction. How do you know you are in a correction? Let's say we are in a bear market and begin a bounce. If the up days are on light volume it's bound to fail. It can be as simple as that.

Sharp corrections retrace either 38 percent, 50 percent, 61 percent, 78 percent, or 88.6 percent. In rare cases they will retrace 23 percent. Several years back a study was done by Rich Swannell, an Australian Elliottician. He took millions of retracements in all degrees of trend and found that 60 percent of second wave retracements fell under the bell curve between the 25 to 70 percent retracement level (34-35). This adds to the complexity, since 40 percent of the time we will have some other retracement such as the 14.6 percent or even the 88.6 percent. How one definitively defines a second wave in an impulse or a B wave in a corrective, I'm not sure.

We derive the 88.6 level because it is the square root of the 0.786 retracement level. However, moves will stop short of a full retest right on the 88.6 percent marker. For most common retracement relationships, the following happens. An impulse move in one direction will occur, and when it comes time to retrace, the first leg will retrace 38 percent counter to the trend. This would be an A wave or the first part of an ABC. A small B wave commences, and finally the C wave kicks in to take the entire retracement to the 50, 61, or 78 percent marker.

For instance, the first move counter to the main trend keeps going and re-traces 61 percent. This is a clue the move might not be corrective. Normally, A waves will not move 61 percent counter to the prevailing trend. Odds are something else is going on. What might that be? First legs that move 61 percent going the other way most often are new trends in the opposite direction, but they could also be 100 percent retests which turn out to be double tops (bottoms).

Flat corrections are also known as complex sideways patterns. Their shape is also the three-wave pattern, but it is considered to be broken down into a smaller subset of three-three-five. They are best recognized as moves where all three legs tend to equality. The A wave will move counter to the prevailing trend and likely to retrace 23 to 38 percent, then the B wave will come all the way back to retest the high (low). The C wave will drop down to the level of support (resistance) of the A wave before the prevailing trend continues.

One of the most dangerous patterns in the entire catalogue is known as an irregular or expanded flat pattern. This pattern is very dangerous because it has a low probability, yet it happens often enough to be a problem. While there hasn't been a statistical study done on expanded flats, I've been told by other expert Elliotticians they confirm about 30 percent of the time. Here's what happens: After an impulse wave in the prevailing direction, an A wave will retrace 38 percent of the move then turn back in the direction of the prevailing trend and make a new price extreme. Let's say we have an uptrend in place. The first leg down will retrace approximately 38 percent then turn back up, thus confusing market participants into thinking the prevailing trend is back in place. There is the obvious retest of the old high and when the old high is taken out, participants are induced to go long. They are wrong, as prices don't carry very far. What happens next is almost criminal. After participants take their long positions, a C wave kicks in going the other way. C waves are always the most violent moves in the entire catalogue. The C wave usually measures 1.618 times larger than the A wave that began the pattern. If for instance the A wave measured 10 points and the B wave up which took out the old price extreme takes out the old high by two to three points, what happens is a C wave will now drop 16 points, taking out the old A-wave low. The players who went long either get stopped out or taken to the cleaners. Finally, by the time the C wave measures 1.618 times the original A wave, new players are convinced this is a new trend moving in the opposite direction. They join in on the short side, but they are wrong. The correction is over as prices fail to drop another point. This time it is the

bears who are taken to the cleaners as the correct side of the market is once again the prevailing trend prior to the A wave.

The problem with trading this sort of pattern is you can suspect it, but they only work out about 30 percent of the time. Unfortunately, the only time we can really recognize an expanded flat is when they are complete and in the rearview mirror. Sorry, this isn't a game for children. The good news is we can smoke out these patterns more readily by adopting the methodologies uncovered in this book.

■ Triangles

Triangles appear in the fourth wave of impulse moves and B waves in corrective moves. The implication of triangles is they are the next to last move in a pattern. What makes a triangle so complex as part of a fourth wave is that, by nature, fourth waves are difficult to count. Consider a third wave that is usually the most powerful move in an entire pattern. The third wave generally includes the point of recognition where all participants realize the trend is up. Casual participants such as the general public begin to get interested.

At some point in time, the third wave comes to an end and sentiment becomes one of surprising disappointment. Professionals begin to take profits as they sell to latecomers. However, there are still enough buyers to keep the trend alive. A triangle mostly signifies a tug of war for dominance between bulls and bears. As fourth waves are difficult to count, we don't realize we are in a triangle until at least half the pattern is already developed. Let's say we are in a bull market. As wave three ends and there is a drop, participants erroneously assume a new bear market. The first wave down ends prematurely and participants erroneously think it is an automatic continuation of the prevailing bull trend. However, there will still be another drop and those participants who are less convinced drop off. Overall the battle between bulls and bears continues until the triangle completes.

The two most common types of triangles are contracting and expanding. There are a few important guidelines in identifying a valid triangle. In contracting triangles, the five-wave sequence will have at least two waves going in the same direction that have a 1.618/0.618 relationship to each other. That means that either A and C or D and E will have that Fibonacci interwave relationship. The tendency for expanding triangles works the same way, except the waves get bigger as the pattern progresses.

The mistake most Elliotticians make is confusing the triangle with the complex sideways or expanded flat pattern. What happens is the alleged triangle develops most of the way, but blows up near the end. Here are some guidelines to prevent that from happening:

1. Realize the triangle is the next to last move in a pattern. Chances are small you'll see a triangle confirm early in a trend.
2. Always look for those Fibonacci interwave relationships discussed above. If you don't have those relationships, the odds are the triangle is not going to confirm.
3. A triangle has to have the look of a triangle. Elliott as well as Prechter state the most important aspect of any wave count is that the pattern has to have the right look.
4. This one is original to this work. The time bars usually confirm the pattern. This is not an iron rule but rather a strong guideline. Most triangles will finish in the right number of Fibonacci or Lucas time bars.

I have found that triangles will complete in 47, 55, 76, 78, or 89 bars on one of the intraday time frames. As you can see this is a mixture of Lucas and Fibonacci. The time frames followed here are 1, 5, 15, 60 min, and then daily, weekly, monthly, yearly.

Some contracting triangles contain a concept called *Thrust Measurement*. In certain instances when the triangle appears in the fourth-wave position we can measure a perpendicular line from where the A wave begins down to a trend line extended into space as a potential target for the completion of the fifth wave. There are examples of this later in the book but let's say the width of the triangle from the origin to a line drawn perpendicular straight down measures 15 points. Let's say the third wave ends with XYZ stock at 60 and the A wave bottoms at 52 and the triangle finally completes at E wave 55. The mistake many Elliotticians make is to assume the thrust measurement would be the length of the A wave, which is eight points. However, when we back up the lower trend line to the point in time where the A wave started, we find the trend line extends back into space to a point on the chart near 45. Seeing the triangle completed at 55 we can then project a final fifth wave target at 70.

■ Diagonal Triangles

Diagonal triangles are considered to be impulse waves and are the only waves that allow overlap between the first and fourth waves. I think the reason diagonal triangles are considered to be part of the impulse wave family is you

see them so often as fifth waves as part of the larger overall trend. Also, they would not be considered as corrective waves because they are so often the final wave of a pattern. Since there is much overlap they are confused with corrective waves. Eventually, the third wave will sprout above resistance, but as the move gets higher you can determine a wedge shape with converging trend channel lines. The other reason they are confused with corrective waves is each leg is a three-wave pattern and has the look of an A wave.

Most diagonal triangles appear in the ending position but in rare situations they can be seen in the leading first or A-wave position. The difference between the two is the ending pattern is three-three-three-three-three and the leading wedge takes on the shape of a five-three-five-three-five. In the leading position, the wedge pattern has good volume, while in the ending position volume is waning which is indicative of the end of a move.

■ Sentiment

Each particular wave has its own range of emotions. Once a new trend starts, the crowd has been conditioned by the old trend. At the end of a bear market, psychology is such that the masses have been beaten down for years. For those of you who go back to the 1970s, sentiment was so bad that the major brokerage houses were laying off a good percentage of their sales staffs. This is normal behavior in a recession, but in this case reached the point where they were even discouraging newcomers from entering the field. People were so down on stocks that even economists and other industry experts had little hope they would ever take off again. By the end of a bear market, most participants are convinced price action is a bottomless pit that will go on forever. That is how you can recognize a true bottom. Tops are at the other extreme. Recall that by March 2000 everyone was convinced the NASDAQ was going to the moon.

A new bull market starts and is met by doubt and disbelief. Participants are of the opinion the new move up is just a correction, and the larger degree trend will return to set another new price low extreme simply because the prevailing trend has already done so for years (or whatever degree of trend we are considering). Let's go back to the old bull market that ended in 2007 and go through a progression of how each wave did its job. As we know, the old bull market was fueled by a real estate and lending bubble. It's beyond the scope of this book to preach the morality of what happened, but we all know people bought houses they couldn't afford and regulators

allowed it to happen. It was the ultimate smoke and mirrors rally. We can all agree that euphoria ran rampant. Here in Phoenix where I live, in July 2007 real estate agents started seeing the pace of the deals coming in slow down at first, but ultimately come to a grinding halt. The market peaked in October and by that time everyone realized the housing industry was experiencing a slowdown. The topping process that the Elliott community calls the fifth wave did its job with the euphoria and complacency. The prevailing sentiment of the day was the media anticipating a soft landing for the economy. In the first wave of new bear markets it's hard, if not impossible, for market participants to project massive change, not only in the stock market but the economy as well. With such optimistic projections, anyone who steps outside of the box is viewed as insane to buck the crowd. This is why the early phase of a new bear market is met with denial and complacency. By 2008 it became fairly obvious there was going to be no soft landing. Different media outlets released reports that suggested there were to be hundreds of thousands of mortgages that needed to be reset by late 2008. What they meant by that was that the interest-only loans that carried balloon payments needed to be refinanced or they'd blow up. At the same time, Fed Chairman Ben Bernanke told the public that the subprime mess would be contained. This sentiment is representative of early-stage bear markets. This could be the first wave or early third wave.

By the summer of 2008, Mr. Bernanke was invited to speak to the Senate banking committee, where members finally held his feet to the fire. Not only was the subprime mess not contained, but also the economy seemed to be getting worse. This was the point of recognition. At that the SEC placed a ban on naked short selling and for a period of time they banned short sales of banking stocks. Eight weeks later Lehman Brothers collapsed, as did AIG, and the real crisis was on. Over the year, complacency turned into concern, which became panic. Panic became serious fear that the financial system would fail and by the time it ended, the feeling was that the market was going down forever and could never turn up. That was March 6, 2009, and became known as the *Haines Bottom* because the late Mark Haines called the bottom to the day.

By the time historical financial institutions failed, the bear waves had done their job. Bear markets won't end until there is blood in the streets. In terms of Elliott/market sentiment, what is the difference between the third and fifth wave bottom? We are generalizing by categorizing by Elliott standards, but the difference between a late-stage bear and the end is that in any bear, fear levels rise and can keep going for a period of time. However, there

always is a day where fear rises to the point where it feels like the market is going to drop forever and there is no chance of a turn. When that happens, markets are usually at fifth-wave bottoms.

So we've come full circle. We've come from a place of extreme euphoria at the old fifth-wave high of the bull to that end-of-the-world feel at the fifth-wave bottom of the bear.

But what about that new bull market we discussed a few paragraphs back? Yes, it is met by doubt and disbelief. Our generation, which knew only of Internet and real estate bubbles, now bore the scars of a financial system that nearly went off the cliff. Years ago Prechter stated that for the generational bull market to end, people would have to give up their seemingly insatiable appetite for stocks. I always wondered how that could possibly happen. Enter Bernie Madoff. In the latter stages of the bear market, it took the former head of the NASDAQ implementing the biggest Ponzi scheme in the history of Wall Street to bring the place to its knees. In February 2009 I spoke at the New York Traders Expo and one day had lunch at an upscale deli in midtown Manhattan. I was sitting at the counter and they had CNBC playing in the background. As luck would have it, just at that time the Dow was breaking below its Internet bear market low from 2002. For a technician this was a fairly important event. There were two well-dressed businessmen sitting next to me and when I brought the Dow event of breaking below the old low each looked at me and said, "Why do you care? We are not interested in the stock market anymore!" There it was. I was in midtown Manhattan and an island that used to be stock market crazed had finally lost interest. These people were now scarred by the experiences of the financial crisis.

Life goes on and the market did recover. But now nobody talked about soft landings anymore. Day after day the market climbed. Day after day, guests on the business channels were asked if they thought there would be a double-dip recession. This is a classic wall of worry. Thoughts of soft landings were replaced by worries about new recessions. From this complete cycle you can get an idea of where we are in the wave structure based on the prevailing psychology or sentiment.

A first wave also means lots of short covering, as there isn't real buying. There's too much fear. All the bottom turn did was bring relief. Ultimately we get a retracement that has a technical purpose of testing the low. That does not mean it has to go all the way to the exact bottom. The sentiment of second-wave retracements is "Here we go again." You can recognize second- or B-wave retracements by their re-creation of the mood in the final wave of the old trend (Prechter). People do believe that a retest of the bottom is going to

break through. But how can we tell the difference between a move off a bottom and just a bear market rally leg? Participants in a bear market rally believe we are in the early stages of a new bull market. In the early phases of a new bull market, as we just saw, almost nobody believes it is a bull market.

Okay, we've had our retest or technical retracement and participants come to discover the sky isn't falling. When all of the technical requirements for a second or B wave are met in terms of price and time, there is only one way for prices to go and that is to a new extreme in the new direction. In third waves, once we get near resistance or first-wave high sentiment indicators are still mostly negative, as participants believe we are very close to a market top. The truth is we are still much closer to the bottom than we are to the top. In the last great bull market of the 1980s, during much of the early 1980s up to late 1985, participants were convinced we were near a top. It's hard to imagine today, but when the Dow was between 1000 and 2000, people thought that was the ceiling. Since sentiment is negative, the implication is there is plenty of money on the sidelines that hasn't been put to work.

Where does this money come from? Realize that in the early stages of new bull markets the economy has bottomed and confidence starts to come back. There are generally two phases to a new secular market. While lots of people believe the bull market started in 1982, the real bottom was in January 1975, which was before stagflation, Jimmy Carter, 20 percent interest rates, or the Iranian hostage crisis. A new bull market was here, but nobody realized it. After a long period of time without a new market low, prosperity slowly comes back. Bull markets are characterized by a new set of companies with new technologies. As time goes by, people start becoming optimistic about their future prospects and they start investing their earnings. At some point, momentum kicks in and more people finally realize the trend has indeed finally turned. This is usually at the midpoint of third waves and is considered to be the *point of recognition*.

As we know, third waves will extend in some Fibonacci relationship to the first wave. Market conditions, economic factors, demographics, and technology will determine the size and scope of the cycle. A third wave usually extends to 1.618, 2.618, 4.23, or 6.83 times the length of the first wave. In certain instances, the third wave can even be a double 4.23 extension. How else can Dow 2000 in the early 1980s turn into Dow 7000 to 11000 by 1998 to 2000?

By the time we are beyond the point of recognition the easy money crowd starts to get involved. People who have no interest or knowledge of

the markets get interested. When cab drivers make money in stocks, we are getting late in the move. When everyone at the cocktail parties talks about the stock market, it's getting late. By now, sentiment indicators have turned positive and reach bullish extremes. When certain price and time targets are met, the third wave ends. We saw this in 1999 and again in 2006 and 2007.

The prevailing sentiment of fourth waves as discussed previously is one of surprising disappointment (Prechter). Fourth-wave consolidations are very complex. According to Bill Williams, another well-known Elliottician, if you wake up in the morning and have no clue about the wave count, odds are it is a fourth wave. Fourth waves are characterized by many cross currents. There are those who are convinced the bull market is over. Others are attempting to buy the dip. In the end, the pullback is of a lower volume than the third wave up and lacks the conviction of a new trend going the other way. At some point, selling pressure dries up and the fifth wave kicks in.

Fifth waves are characterized as being weaker technically than the third wave, yet sentiment goes to new extremes. Not only are the cab drivers becoming day traders, but even grandmothers are pulling the trigger. Many are total novices involved for the first time. Technically it is a pattern where all divergences develop. The first one is the advance/decline market internals are not as strong as the third wave. Fewer and fewer stocks are participating in the move. There is a divergence as the move powers on, but with lighter volume. During earnings season, stocks are already priced to perfection and if they don't meet inflated expectations they are generally taken out to the woodshed. However, since it's still the fifth wave, prices tend to recover but not with the power and conviction seen in the third wave.

As the market powers even higher despite bearish divergences, weaker volume, or market internals, this convinces everyone that prices will keep going higher. Why? Because the mood becomes a self-fulfilling prophecy. By the end of a fifth wave, proof of the trend is seen as, despite the early signs of trouble, the market keeps going. We get a few lone voices of reason suggesting that trouble lies ahead. In 2007 such voices were Douglas Kass and Peter Schiff. But they are generally ignored and looked upon as foolish. At or beyond the top, anyone who views a market pullback as anything more than an economic soft landing certainly has their sanity questioned. Finally, participants are convinced that prices can only go one way. A day will come where the talking heads on television will announce that nothing is standing in the way of the markets powering even higher. It feels like the market can and will go up forever. That is when the move is likely over. At bear market bottoms, it is just the opposite. People see the market as a bottomless pit.

At market tops, everyone is finally convinced prices are going to the moon. This is where it ends. The waves have done their job.

■ My Experience with Elliott

There is no doubt that Elliott Waves provide a universal structure to all free financial markets. It is an excellent pattern-recognition system. Those in academia who have been telling us for the past 60 years that prices are random are all wet. If you get nothing else from this book, you'll realize that Random Walk theory is totally obsolete. According to Burton Malkiel, future steps or market directions can't be predicted on the basis of past actions (24). Those who tell you it's impossible to time financial markets just don't have the skills required to do it. The Elliotticians of the twentieth century, from Elliott himself all the way to Prechter, have laid a firm foundation of understanding how financial markets work. The Wave Principle was the first really popular line of defense against Random Walk theory, but I believe it's best used as a guide as opposed to a pure trading strategy.

Since trading requires quick action, there is so much subjectivity in the interpretations of the waves. Strict Elliott interpretation contains wave notation in degrees of trend that range from Grand Supercycle all the way down to micro waves on a one-minute chart or even smaller on a tick chart. You can spend so much time trying to figure out if you are in wave one of wave two or is it still wave five of one. The academics of the Wave Principle also get caught up with proper notation with letters, numbers, Roman numerals, and Roman numerals with parenthesis. I found this to be entirely unnecessary and believe it is more important to take the spirit of what the leg might be telling you as opposed to a strict notation. If you are a person that can really come up with a strict count and be correct, more power to you. By being correct I don't mean just an academic interpretation, but being able to pull the trigger and actually make money out of such an interpretation. However few people are really able to pull it off. So it's a great methodology when combined with other good pattern-recognition methods.

I'm here to tell you that the most important thing you can do with Elliott is apply common sense to the situation. The best application of Elliott in real time is as a guide. You don't need certainty in wave counts. You do need to have an idea where you are, however. It's important to know if you are in a first, third, or fifth wave. It is important to understand the difference between impulse and corrective trends. If you get the major part right you can

be wrong about the exact wave count, but if you are still on the right side of the market you will come out ahead.

Put any number of Elliotticians in the same room, and you are liable to get that many different interpretations of the count. The leaders of the wave community have done a fine job of laying the foundation and setting the table for the next development in this field. What they've done is tell us textbook waves move in impulse fives and corrective threes. They haven't cured the subjectivity in an extreme market. In a fast market, the intraday third wave often extends far beyond what is normally expected. Let's take this NQ intraday leg as an example.

Here's a leg in Figure 1.4 that has an initial leg off the low of 6.75 points. If we are properly annotating this move, we might call it a third wave and we might call it an ABC, but the bottom line is the big wave is 25.50 points. Simple math shows us that $25.50 \text{ points} / 6.75$ nets us an extension of 3.77. That's wonderful as it's another way of having Fibonacci work for you, but we've been taught the most popular Fibonacci extensions in an Elliott Wave are 1.618 and 2.618. What happens when we have to think outside the box? Traders are not prepared for this and likely miss the message this chart is telling us. A chart like this only adds to the subjectivity of Elliott, not diminishes it. Or how about this one.

Here's a crash on an intraday NQ in Figure 1.5. The first leg off the high was 7.25 points. One of the lower-probability Fibonacci extensions



FIGURE 1.4 Fibonacci 3.77 Extension

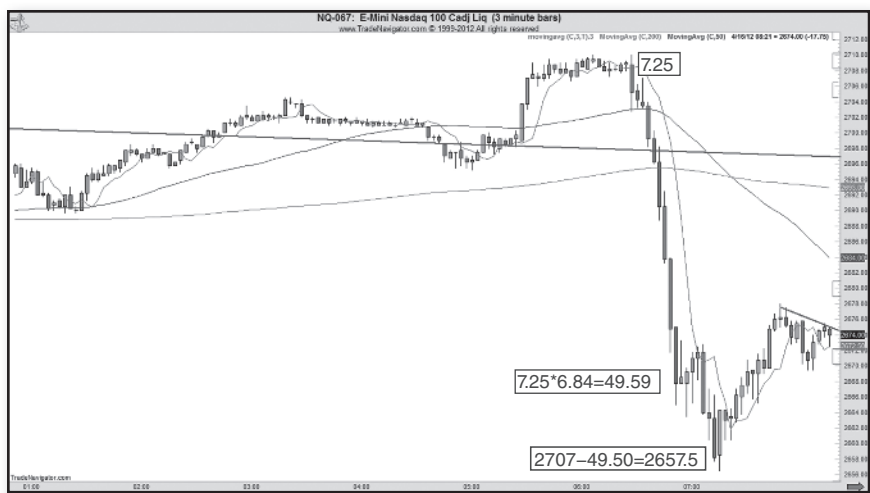


FIGURE 1.5 NQ Intraday Crash

we've learned is a 6.84 extension. This chart shows you that 7.25×6.84 is 49.59 and what actually happened. We had a drop of 49.50, which is close enough. We end up with that 6.84 extension, but in a fast moving market how many traders actually have the capability of figuring it out in time to react to it properly? But in the Elliott debate, if you were looking for one of the smaller traditional extension levels, a chart like this only adds to the subjectivity debate.

If the subjectivity didn't increase there wouldn't be such debate. To use a sports analogy, if the Mets won the game 4-3, there is no argument. We can analyze the game from a standpoint of strategy, offense, and pitching but all that really matters is the facts. Scoreboard, S-C-O-R-E-B-O-A-R-D. You can never dispute the final score of a game. When you look at an RSI reading of 70, it's 70. There is no debate. When we look at an engulfing candlestick pattern, it is what it is. But if we can't agree on a wave count we have a problem.

The methodology in this book goes a very long way in bridging that gap. What is presented here in the following chapters will take your understanding not only of Elliott but pattern recognition to new levels of precision. The great W.D. Gann began this work nearly 80 years ago, but for most of the twentieth century, at least in the United States, has been brushed under the rug.

What I will do with the rest of this book is introduce the time element on the technical analysis chart and work to incorporate it into existing

methodologies you already use. We will build on it slowly from one chapter to the next. They don't include Lucas to the degree done here. What I do here is attempt to simplify it in such a way to make it the practical extension of technical analysis that it really is.

The first printing of this book limited the scope to Elliott, Fibonacci, and touched slightly on Gann's work. Since that time I noticed that many of the time windows discussed didn't validate for whatever reason. Many did, and if you read the first edition you would have been able to identify the October 2007 top which was the end of the bull market. You didn't need to be a regular trader to get the value from the first edition. All you needed to realize was the top came in the 261-week window to the Internet bear market bottom. If you knew that, you could have protected your 401(k) investment. The first edition has that contribution to the field of market timing and technical analysis. But since that time I wanted to figure out how we could improve on the methodology. How we close the gap of probability and understand why time windows fire off and how we can anticipate what a particular turn might give us. In the five years since the original version, I've closed that gap quite a bit. This edition will present that research and be of greater value to you. There are a variety of tests I use which help our understanding of pivots.

Gann started this work that for the most part has not caught on with the masses because it is very complicated and takes too many years to learn. I'm not going to hit you over the head with Gann wheels or angles. My job is to take something very complex and present it in a practical way that won't take years to learn. My job is to take the complex and make it simple. Mind you, don't confuse simple with easy. This takes work but I believe it is very rewarding and well worth the effort. No matter how well this works, if it doesn't become fun, you won't adopt it as part of your game plan. We are going to introduce some of Gann's most important discoveries, which will help the individual trader stay on the right side of the market. If you are a hedge fund manager, it might just save you hundreds of millions of dollars.

By the time you are finished with this book your understanding of Elliott will be greater than it is now. You will be able to eliminate much of the subjectivity of Elliott and confirm patterns based on the time element of the charts. You will be able to recognize tops and bottoms as well as the many smaller turns in the markets. You will be able to look at a chart and determine the direction more easily than ever before. You will be able to combine this methodology with other popular indicators and use them with greater effectiveness. I will show you how to make Gann workable without investing 10 years of your life. We will incorporate it all together into a total toolbox

of methodologies you can use to help navigate any market condition and as we all know, markets are more challenging now than they've ever been.

Throughout the course of the book I introduce other methodologies as well. I rely very heavily on candlesticks. There are many good books on candlesticks and I recommend all of the Nison materials. I also incorporate moving averages as those who utilize volume studies or trend following systems use them. My own evolution went from exponential to simple averages and you will see them used interchangeably on shorter time frames. There is very little difference in the results whether you use an exponential or simple average on the smaller averages, but there is a big difference when you get up to a 200-period moving average. Because many of the Gann examples are taken from our newsletters, which use the Andrews pitchfork/median line methodology, we also have a crash course to help bring you up to speed. I like Andrews as a method for helping to identify a trend. However, when combined with the square of 9 work, it produces a high probability trading strategy.

Since the first edition, I no longer rely on lagging indicators. But like anything else, they may be tough to give up. The original book was inspired by traders who doubted the rally in the middle of the last decade. They saw a moving average convergence/divergence (MACD) at extreme and wanted to sell even though the market was still showing signs of wanting to go higher. The takeaway from the first edition was to realize an indicator can stay extreme for a long period of time, until the time windows fired off. For those of you who still use those indicators, it's an important lesson. But it's also my wish in this edition that you learn some of the more advanced calculations and symmetries so that you no longer need to be dependent on such indicators. I suggest that after you learn some of the more advanced techniques you look at your charts with and without lagging indicators until you can wean yourself off them.

Most importantly, you will have a practical, high-precision pattern-recognition system you will be able to use to trade and make money consistently. How much money? That is entirely up to you. This depends on your dedication. This book isn't about money. Technical books by Edwards and Magee as well as others are not specifically about making money. However, what they do is give you high-probability tendencies that work. This book is the same. It's about process. My take is if you keep your mind off the prize you will get it. I know the ultimate goal is to make consistent profits. You can only do that by doing the fundamentals correctly. In professional sports the goal is to win the championship. But how much time do they really spend on

talking about winning the championship? Not much! But they do spend a lot of time talking about developing championship-type work habits. They talk about fundamentals, mechanics, attitude, and practice. Mostly practice and then more practice. Why do they practice so much? It all leads to the final step, which is execution. They practice and train so hard for the moment that doing the right thing becomes second nature. Tiger Woods makes that difficult shot because he practiced it thousands of times, visualized it probably a thousand more. By the time he has to execute, his impulses take over. But did you ever stop and think why Tiger Woods, Michael Jordan, or Kobe Bryant are able to do what they do? It's a process called neuroplasticity. Brain experts like Dr. Joe Dispenza have figured out (*Evolve Your Brain*) that the brain forms new neuropaths in roughly 21 to 24 days. Want to know why it takes three weeks to form a new habit? It's the neuroplasticity. The idea is that when you learn a new skill, the brain grows a road of recognition that makes it easier to identify in the future. Athletes have such good hand-to-eye coordination because of the pathways developed in the brain. Trading is the same way. You train your brain to recognize certain patterns as setups and link them to opportunity. Whatever method is being used, it's a matter of pattern recognition. The challenge in trading is to recognize a moving target. In a book you'll see a setup, but in real time you have to recognize that pattern on the basis of a bullish or bearish day, a sideways or sleeping market, or a market that is both bullish and bearish. It takes a while to develop enough plasticity so you can differentiate that some days you ought to buy the dip yet others sell the rally. It all comes down to discerning differences. This is why it takes traders years to master the profession. First of all you need good data, because this really is a case of garbage in and garbage out. If you are feeding yourself with the right kind of information, sooner or later you will master pattern recognition. But if you spend your whole career looking west for a sunrise it's never going to happen for you no matter how much you study.

Getting back to athletes like Woods or Kobe Bryant they know what to do and because the plasticity leads to confidence it will happen. Some of you will take this material, incorporate it into your game plan, and make it your own. Others will read it passively and marvel at market precision and do nothing with it. It is entirely up to you. Rest assured that, by the end, I will give you strategies you can use immediately in your trading.

When it comes to pattern recognition, keep in mind that no two patterns are alike. The time dimension is like snowflakes. But tendencies do repeat. Your job in this joint venture of ours is learning the tendencies. When you

learn the tendencies, you will come to recognize patterns that will help you make money. I've uncovered characteristics that repeat over and over. Many of you are not even aware they exist. The purpose of this book is to shed the light of day on it. I'll give you the tools. I'll give you the car, but it's still up to you to turn the ignition. You will still need to pull the trigger.

So what is the best way to do this? It's a very controversial subject within the trading community, but I think the best way to learn is on a simulator. That's not the same as paper trading. Nowadays many brokers offer simulators that allow you to trade real market conditions without the using the money. Of course the argument against it is that no money is at stake. That's true, but professional athletes practice a game plan all week and nothing is on the line. Coaches always comment about how well or poorly their team practiced that week leading up to the game.

This is a business that is truly about the process. If you are going to be complacent about a simulator then I agree, it won't be of any use to you. But let's say you are practicing buying the dip after an ABC down. You can practice it on a daily chart, hourly, chart or a five-minute chart. That potential dip can end on the most bearish of days or it can end on a neutral day. It could end after a weeklong pullback on Friday morning after the unemployment report or in the last hour of trade Thursday evening on a surprise reversal. As a trader you must be ready for all conditions. How do you manage to do that without blowing an additional bankroll? I believe the only way to do it is by using a simulator.

It's one thing to trade a pattern, it's quite another to recognize that pattern under a variety of conditions, make the necessary adjustments, and have the discernment to know when to pull the trigger and when to sit back. In terms of Elliott, some patterns are going to extend to a 1.618 and others to a 2.618 as you'll see. The idea is to develop some discernment and not short a move just because of a calculation. What you want to do is make these calculations your tool and not be a slave to them. Understanding market sentiment and psychology goes a long way in helping your ability to discern the difference.

So at the end of the day, what we are doing here is taking the trader from where many started. That is by use of indicators that come on just about every software package. We are talking about oscillating indicators, which are guides at best, and we combine them with the timing windows like we did in the first edition. You can do well with that because you won't be relying on lagging indicators anymore. But as I said earlier, what I found since the first edition was completed is there was still too much of a gap because not all

Fibonacci windows would validate. Not only that, some would validate and not last very long. I wanted to know why and set out on a journey to figure it out. My research led to Gann and was able to greatly close the gap. That work is presented here. But as I instituted the work of Gann and uncovered some incredible market symmetry I found I no longer needed to use oscillating indicators anymore. It became a matter of pure pattern recognition. So this new edition goes beyond lagging indicators into this new/old frontier.

We no longer need to combine Elliott counts with the lagging indicators. If you like you can now combine Elliott Waves with Gann work or just do the Gann work. But once again understand this is a process of developing plasticity. You won't do this overnight. You should make a study by using your old methods side by side with the new. Over time you will develop the ability to trust the new and leave the old behind.

What you'll also develop is the ability to discern when a specific time window isn't going to validate. For instance, readers of the first edition know we relied heavily on a 161 window. Many times it will validate. But there are lots of times when it won't. The reason it doesn't is because it's not supported by a time and price symmetry. So you study to see if there is a good symmetry or square of 9 reading. If there is and the market validates with a reversal bar, great!

If we come to the 161 window and it starts to turn but fails, you run your calculations and find there aren't good readings at that turn, it will give you the conviction to ignore the time window. In a pure timing sense, I believe this is the biggest difference between the first and this new edition. On the other hand, if we have great calculations on the 161 window and it fails anyway, that means there is a strong underlying structure to the prevailing trend and it should continue for many bars. Great calculations are going to repel most tests and challenges. But if they are taken out, it's different than if a resistance or support area is taken out with nonexistent to mediocre readings.

If the market comes to the 161 window and doesn't even stop, don't worry about it. What the first edition did was take the person who used lagging indicators and taught him how to combine the time principle. This book teaches you how to wean yourself off lagging indicators altogether and go to a new advanced level completely by starting with the timing element and squaring it with price. By the end of this book you'll be able to effectively combine the high-probability points on the chart the smart money is looking at (support and resistance) and develop your conviction about any move based on the underlying structure of the market based on the symmetries and calculations you will learn.