The Master Trader's Guide To The Galaxy

Intensive QQQ, SPY, DIA workshop
with market veteran Adrian Manz

SuperVol Sunday

Capture Index Volatility With Index ETFs

TraderInsight.com

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Welcome to Super-Vol Sunday

I am thrilled that you have decided to join us for this trader-evolution event! I have spent much of my trading time over the past several years working with private equity firms trying to capitalize on the most liquid opportunities to profit from the markets. Super-Vol Sunday represents an excellent opportunity to put many of our like-minded Income Trading Boot Camp alums in front of the same solid trading strategies that allow big trading firms to capitalize on what everyone learned together in the mastermind training.

The Income Trading Academy and Boot Camp focused trader attention on moves in individual stocks as broader markets and sectors move through accumulation, distribution, markup, and markdown. The intraday strategies we worked with at those events allowed us to capture the most significant possible one-day price movements in individual securities and to stay with a trending move long enough to profit from the institutional order flow we identified using natural price support and resistance.

Today's training takes the building blocks you worked hard to master in Miami Beach and expands them with additional technical tools, making them applicable to major index trades. The QQQ, DIA, and SPY represent the cornerstone securities for what we will learn. At the same time, derivatives in the futures and options markets will provide access to more leverage and large liquidity pools. The volatility in the indices will sometimes prove challenging. Direction, order flow, trend, slippage, and dynamics will take some time, but for most traders, the opportunity to work with an entire index will be well worth the shift in thinking.

The techniques we will focus on today are meant to supplement what we already do in the markets. They should increase your trading repertoire, giving you skills to stay active after the morning session and throughout the day. Let's start by taking a look at ETFs and the tools I use to evaluate their price action.

Enjoy!

Adrian Manz

Sections

Exchange Traded Funds

Exchange-traded funds (ETF) are managed similarly to mutual funds. They diversify investments by tracking an index, commodity, or sector while providing the same trading access as a regular stock. They can do this because of a complicated creation/redemption process that separates them from mutual funds. This process allows ETF prices to fluctuate all day, as transactions occur during market hours, while mutual funds are repriced once per day after the market closes.

During the creation phase, the ETF sponsor and self-clearing broker-dealers known as authorized participants (APs) work to appropriately weight and wrap components into creation units that are typically 50,000 ETF shares. The AP is a broker-dealer that has the resources to provide in-house clearing. This differs from retail brokers, who get their clearing services from outside firms. The AP is responsible for assembling the securities, while the sponsor bundles them into the wrapper and then delivers them to the AP for introduction to the market.

Redemption is the opposite process of creation. This occurs when the AP collects ETF shares from the market and returns them to the sponsor. The sponsor then delivers the underlying shares back to the AP. This provides a tax-efficient in-kind exchange which makes the transaction a tax-exempt vehicle for participants and creates outsized liquidity in the market.

Along Came a SPYDER

The SPDR S&P 500 ETF (SPY) was the first to market in 1993. It tracks the S&P 500 Index and was marketed heavily in the years that predated the online trading boom. SPY allowed traders to buy and sell the entire market with the same expense ratio of trading just one stock. The liquidity of the SPY gave it unparalleled transaction efficiency and quickly made it a favorite vehicle for traders and investors.

Shine on You Crazy Diamond

The popularity of SPY and the advent of online trading led to the creation of the DIA in 1998. It follows the 30 “blue chip” U.S. stocks that are the current components of the Dow Jones Industrial Average, the most recognizable market barometer of all time. When people ask how the market did during any time compression, they generally ask for the performance of the Dow, a price-weighted index of companies that have sustained earnings over a significant time. The Dow is the oldest continuing U.S. market index.

An Exchange for The Digital World

By 1999, direct-access trading was a reality. Transaction costs were high, with trading commissions on quality platforms hovering around $25 per side and software fees at around $500 monthly. Internet connectivity was dismal, forcing serious traders to pay upward of $1,000 monthly for T-1 connections to brokers. All of this added up to a hunger for stocks that moved because they could offset the impact of high fixed costs.

Technology stocks were the darlings of traders in the late 1990s because of their extreme volatility. The Nasdaq market was the place to trade them, and the 1/8-point (12.5 cent) spreads at the time made for fast money on 1,000 share buys at the bid and sales at the offer. The problem was finding the right stocks to trade to mirror the big swings in the Nasdaq 100. Invesco saw the need for efficiency and offered the QQQQ as the answer.

As a Nasdaq-listed security, today’s QQQ was required to trade with a four-letter symbology when it was introduced. When Nasdaq won the right to use three-letter symbols, the ETF was rebranded as QQQ. The ETF tracks the Nasdaq 100 index, which focuses on technology and excludes financial stocks. The index is capitalization-weighted, with holdings skewed toward large-cap stocks.

QQQ Sector Weighting

The breakdown of QQQ components is re-weighted quarterly, with a fourth-quarter 2022 distribution as follows.

Sector	Share of QQQ
Information Technology	30.51%
Electronics and Hardware	28.46%
Retail Trade	11.45%
Healthcare	6.32%
Consumer Durables	5.18%
Consumer Services	4.83%
Consumer Non-Durables	4.36%
Industrials	2.59%
Communications	1.60%
Utilities	1.52%

The sectors followed by the QQQ allow traders to operate in an environment less impacted by geopolitical shock than indices that include Oil and Gas or Financial sector holdings. This, coupled with extreme liquidity, makes it a logical choice for intraday and swing traders. It also benefits from the significant volatility of its core components, allowing traders to capture relatively large moves in the era of one-cent spreads.

The Tools of the Trade

Those who have followed my work for nearly three decades know I am a purist. I focus on price action, order flow, volume, and time as the ultimate arbiters of what will happen in an individual security or the broader market. My adventures in the markets have been as an active participant, not a bystander. My role has been as a stock market operator, analyst, fund manager, and teacher. In each of those capacities, I have avoided leaning on backward-looking indications of what is happening with the price of a market.

If an intrinsic understanding of trading is your goal, I recommend focusing on my primary arbiters until they are second nature. Gaining an understanding of how markets work is a purist's game, and the ability to follow and predict price action is a skill learned over time with lots of practice. The hundreds of available technical indicators will only make you a better trader if you understand the underlying dynamics driving their signals. And the use of any indicator should be as a decision support tool, not as a crutch.

Julie and I have traded nearly every day since 1997. We see the markets through a set of almost identical lenses. We work together and use the same software platform and charting tools. Julie enjoys candlesticks, while I focus on open-high-low-close bar charts. Both deliver the same information differently, and I encourage traders to use whichever one they feel most comfortable with. The same goes for charting and trading platforms, particularly when trading the tight spreads of an ETF like the QQQ.

We have used RealTick (now called the EZE Execution Management System) since 1997. It provides the best charting and execution available anywhere and affords us a level of integration that makes our business seamless and trouble-free. The downside is that many traders who learned their craft in the post-decimalization world find it expensive, but it represents a bargain to us, as it makes our life easier. That said, the focus here is on trading instruments with almost unlimited liquidity. You can work with virtually any software and broker combination and receive nearly instant fills with less than a penny or two in slippage. The key is to set up your workspace and workflow as efficiently as possible so you can step in front of the opportunities when they are present.

My Workflow

The charts and execution management I will show you in this manual all use the RealTick EMS. Except for volume-by-price, you can quickly adapt everything I will show you to your platform. I will focus only on the screen real estate used for the QQQ volatility band trades and explain why I do things the way I do. The following screenshot of the 30-inch monitor I use to trade the QQQ shows the entire layout.

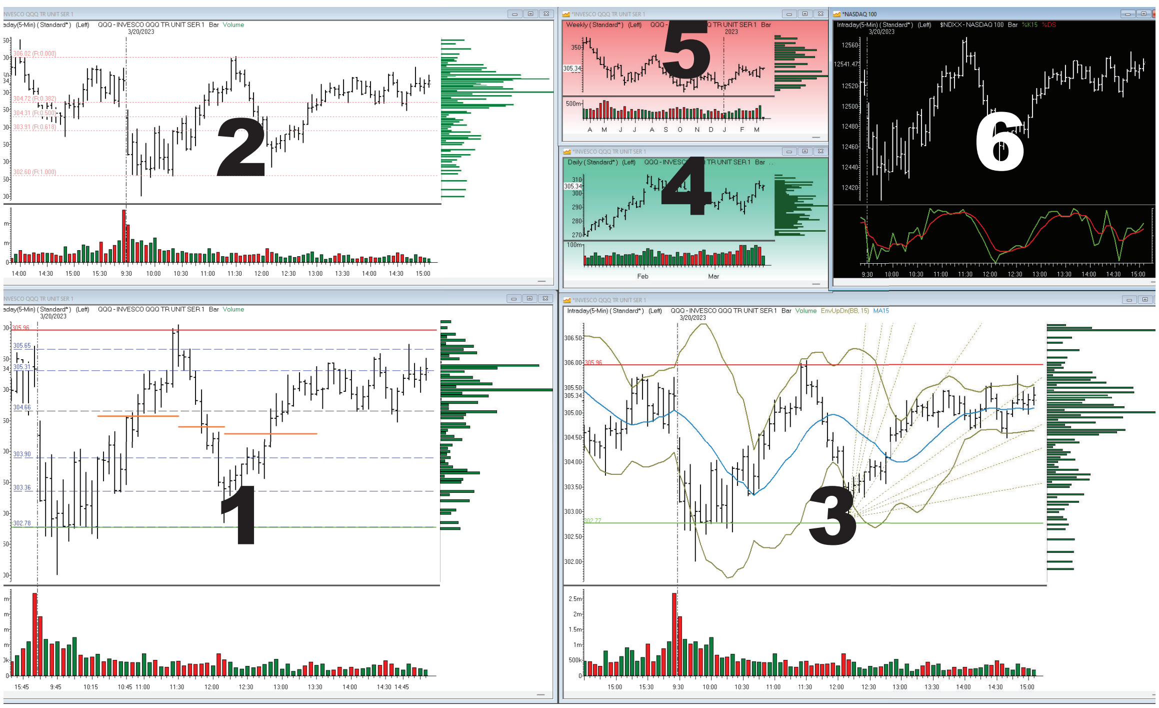


Figure 1 - Screen layout.

The layout gives me a detailed look at what is happening in the market and lets me keep things separated so the charts are clear and coherent. I will review what each portion of the screen contains, then discuss each analysis independently.

The Breakdown

1. This 5-minute chart manually plots support and resistance lines that help me isolate and anticipate buying and selling pressure. It includes floor trader pivot lines for the same purpose. On the X-axis, volume is plotted and color-coded to indicate a buying (green) or selling (red) bias when the bar forms. The Y-axis represents price levels and prints. The secondary vertical axis shows RealTick's proprietary volume-by-price analysis. This chart is also where I plot anchored volume-weighted-average-price (VWAP) thresholds throughout the day.
2. This 5-minute chart also plots volume-by-price and floor trader pivots. I use this chart to plot Fibonacci retracement and expansion studies and to observe the relationship of the full-session VWAP to any of the anticipated inflection points I will identify.
3. This 5-minute chart has all the common components of charts one and two and plots two standard deviation envelopes around the average closing price. Most trading software refers to these as 2SD Envelopes or Bollinger Bands.
4. This chart uses a weekly time compression, allowing me to see significant support and resistance from the bigger picture.
5. A daily chart lets me see how recent price action has reacted to what happened in the weekly compression. This helps anticipate the importance of the order flow in my 5-minute charts.
6. When trading the QQQ, I keep a 5-minute chart of the NDX 100 index here with a stochastic oscillator that focuses my attention on trend strength.

Traders must understand what the tools on their charts tell them and how they are constructed. So let's go through what I have listed and make sure that we all have the same understanding of what I am using and why I find it helpful. Once we have that groundwork in place, I want to focus on the psychology required to master the discipline of this type of trading.

Natural Support and Resistance Lines

The chart in Figure 2 is a bare-bones look at the price action in QQQ on April 6, 2023. This is where your analysis of order flow should always begin. Each additional layer of analysis applied to a chart will serve as decision support. But quickly spotting and understanding the significance of inflections is critical to becoming a profitable trader.

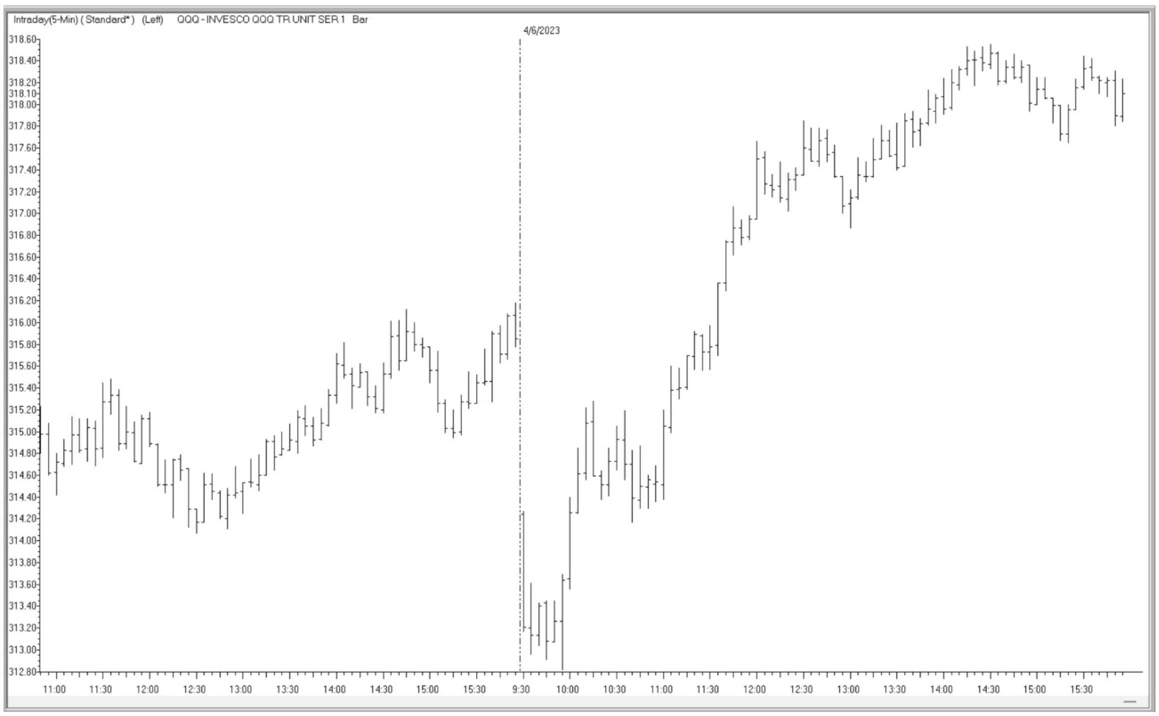


Figure 2 – Open, High, Low, Close 5-minute bar chart

Look at Figure 2 and think about what is happening at each consolidation. Consider every "pointy" or sharp inflection. These tell you about the order flow in the market for the Nasdaq 100 or the QQQ. What looks like noise or a random walk to the layman is rich information for the trained eye and provides a "tell" as to what the market will do the next time the price arrives at the same level. Every time the price reaches one of these levels, the market tells you something. The reactions to these spots on the chart allow us to anticipate whether traders or trading algorithms will make a market at an inflection point or between multiple inflections.

Now consider the chart with support and resistance areas marked with horizontal lines drawn with a primary tool available in every charting software platform.

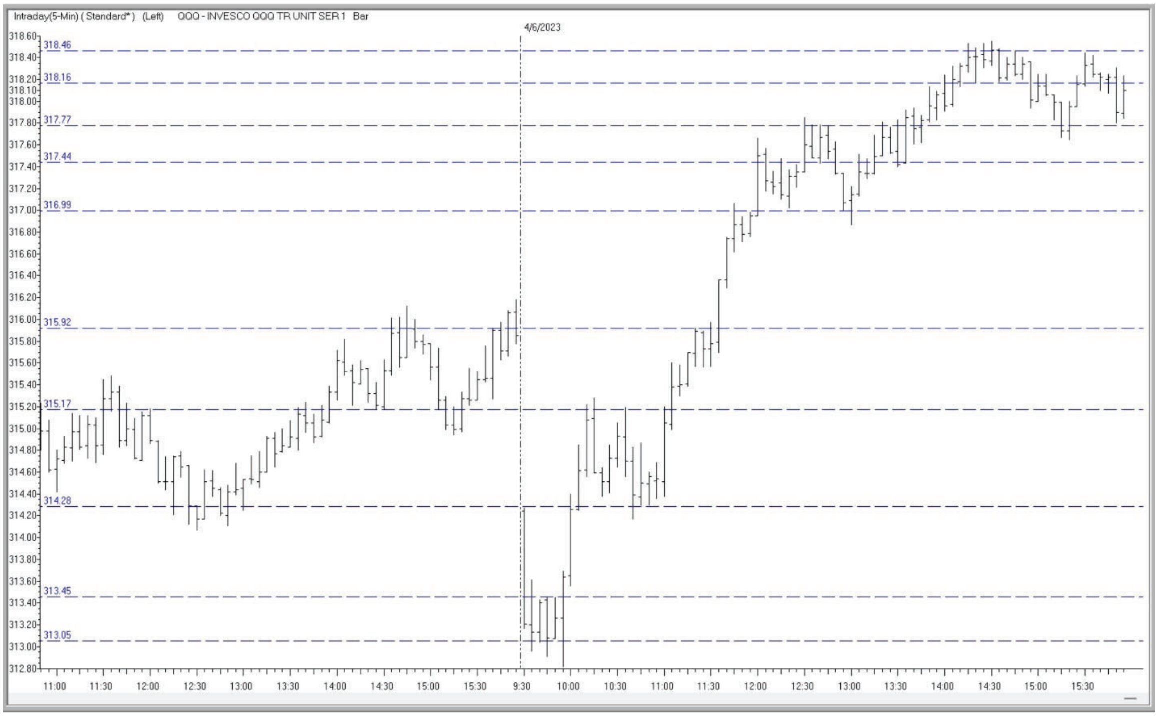


Figure 3 – Natural support and resistance isolated by horizontal lines

Each line I plotted on the chart in Figure 3 represents my effort to isolate where significant buy and sell-side order flow was present in the market for QQQ. These simple lines are the most valuable tools in my analytical toolkit. They provide an easy-to-identify visual representation of where buyers will pressure the market to move higher and where sellers will reverse the momentum and lower prices. These lines also clearly indicate how the program trades and high-frequency trading algorithms will operate.

Compare Figures 2 and 3. Note that the lines I drew represent an attempt to capture significant inflections on the chart. Prior inflections determine significance at the same price levels. When you look to the left on the chart, you will see the trading that took place on April 5, 2023. Notice that when the bars on April 6 reach the support and resistance areas defined on April 5, they find the residual order flow from the prior session. Experienced traders assume that support and resistance reassert themselves repeatedly, and when a level is violated, resistance becomes support, and support becomes resistance.

In Figure 4, I have labeled the spots on the chart that I saw as inflections with matching letter pairs. Look at the first letter in each pair starting with "A" on the left side of the chart in the prior session data. Take note of what each inflection line suggests will happen the next time price arrives at the point designated by the letter.

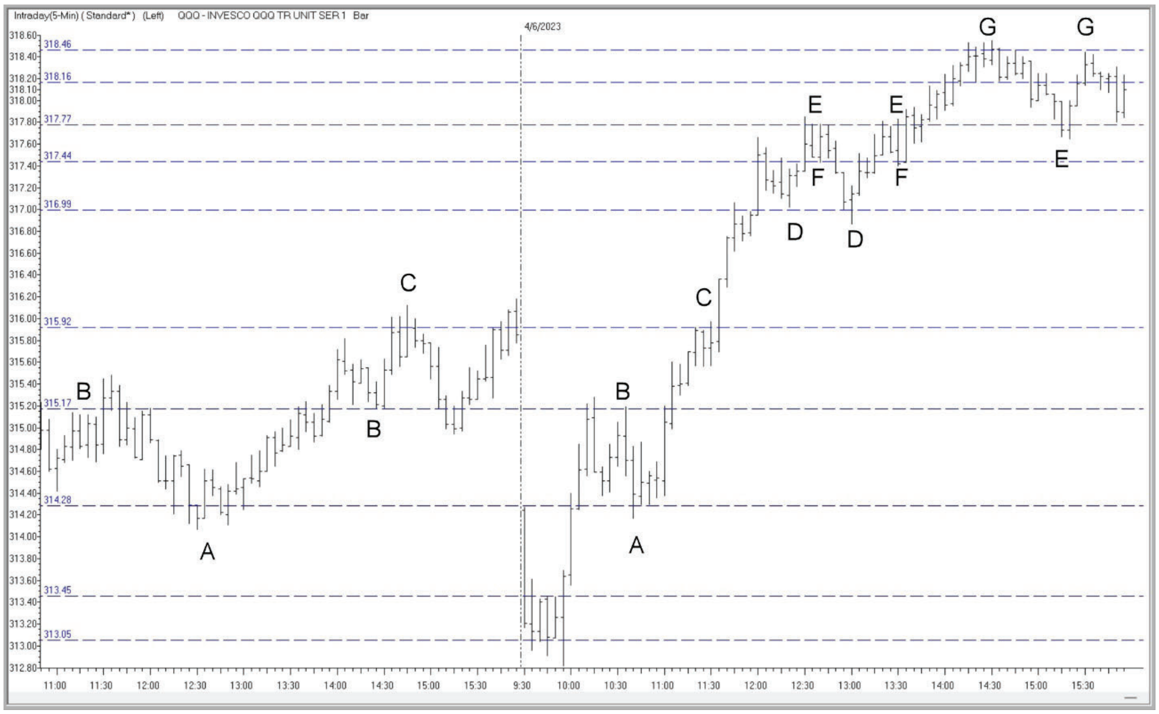


Figure 4 – Anticipating order flow at repeated inflections

You should see that the impact of prior inflections on price behavior at subsequent inflections at the same horizontal lines is substantial. Anticipating what will happen the next time the price of QQQ reaches one of the marked inflections from the same direction is a crucial skill and is practically instinctual among successful traders. Understanding that support will become resistance and resistance will become support is critical in understanding how market dynamics will interact over the trading session. It is also an essential factor in trader psychology because this understanding will help you see the importance of establishing positions at early retests of the levels and allowing later retests to move through the lines and develop new trading ranges.

Exercise

Examine Figure 5. Note where you see significant support and resistance. Remember to focus on the areas that show multiple retests and what happens on the right side of the chart when prices make early retests of the same levels. Then compare the levels you identified with the ones I marked on the same chart in Figure 6.

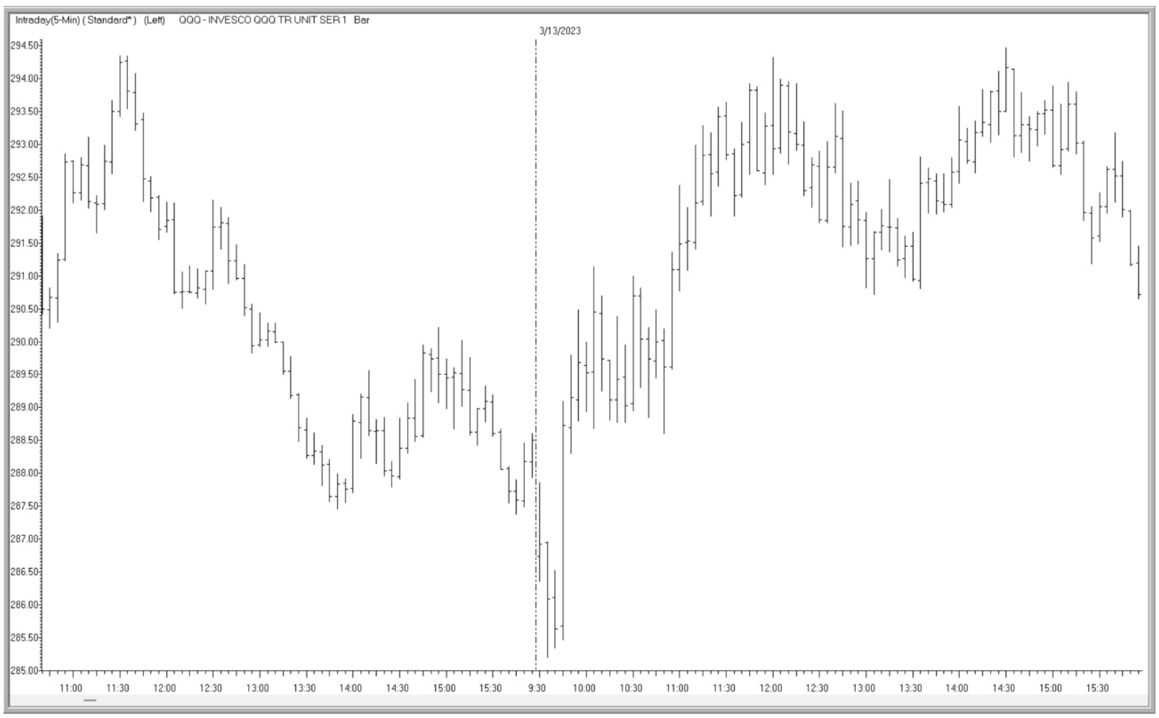


Figure 5 – Find levels of significant support and resistance.

Notes:

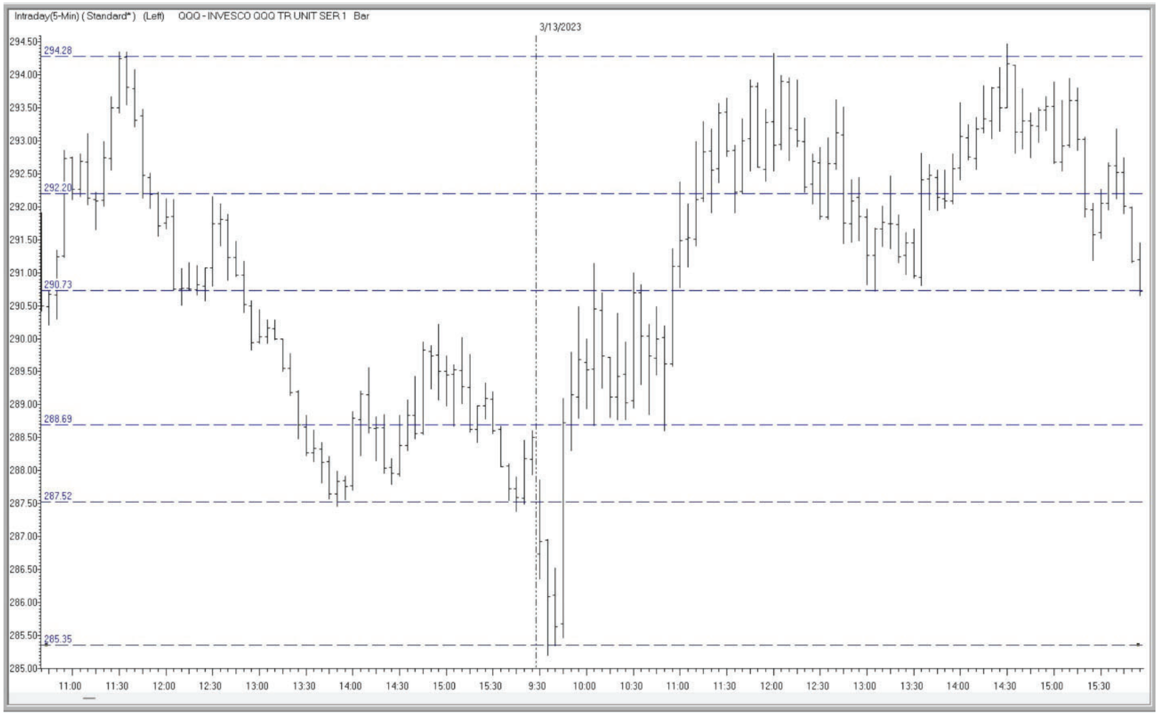


Figure 6 – The levels I identified on the exercise chart.

Notes:

Floor Trader Pivot Lines

Floor trader pivots are support/resistance levels used in exchange pits long before we were trading. They define a fulcrum, or equilibrium point called the central pivot, representing a neutral market. Price is expected to revolve around the central pivot over the session, and while the calculation can seem arbitrary, the prophecy is often fulfilled under normal market conditions.

The calculation of the central pivot for tomorrow's trading is performed using today's data and is as follows:

$$Central\ Pivot\ (P)\ = \frac{High\ (H) + Low(L) + Close(C)}{3}$$

The calculation for the first resistance is performed using today's calculated pivot and yesterday's low as follows:

$$First\ Resistance\ (R1) = 2\ \times\ P - L1$$

The calculation for the first support is performed using today's calculated pivot and yesterday's high as follows:

$$First\ Support\ (S1) = 2\ \times\ (P) - (H1)$$

The calculation for the second resistance is performed using today's calculated pivot and first resistance and first support as follows:

$$Second\ Resistance\ (R2) = P + (R1) -\ (S1)$$

The calculation for the second support is performed using today's calculated pivot and first resistance and first support as follows:

$$Second\ Support\ (S2) = P - (R1) -\ (S1)$$

In 2002, a professional trader and very dear friend of mine, said to me "...you know those pivot lines are nothing but inflection points." My response was "... well aren't we in the business of predicting inflections?" He said "... I'll be plotting those pivots starting tomorrow morning."

Pivot lines have high predictive validity, especially when accompanied by overlapping indications (confluence) of price reversals. Later in this manual I will discuss a standalone pivot strategy with a trade success rate higher than 80%.

The following charts show the reaction of QQQ price action to pivot lines plotted on a RealTick chart:

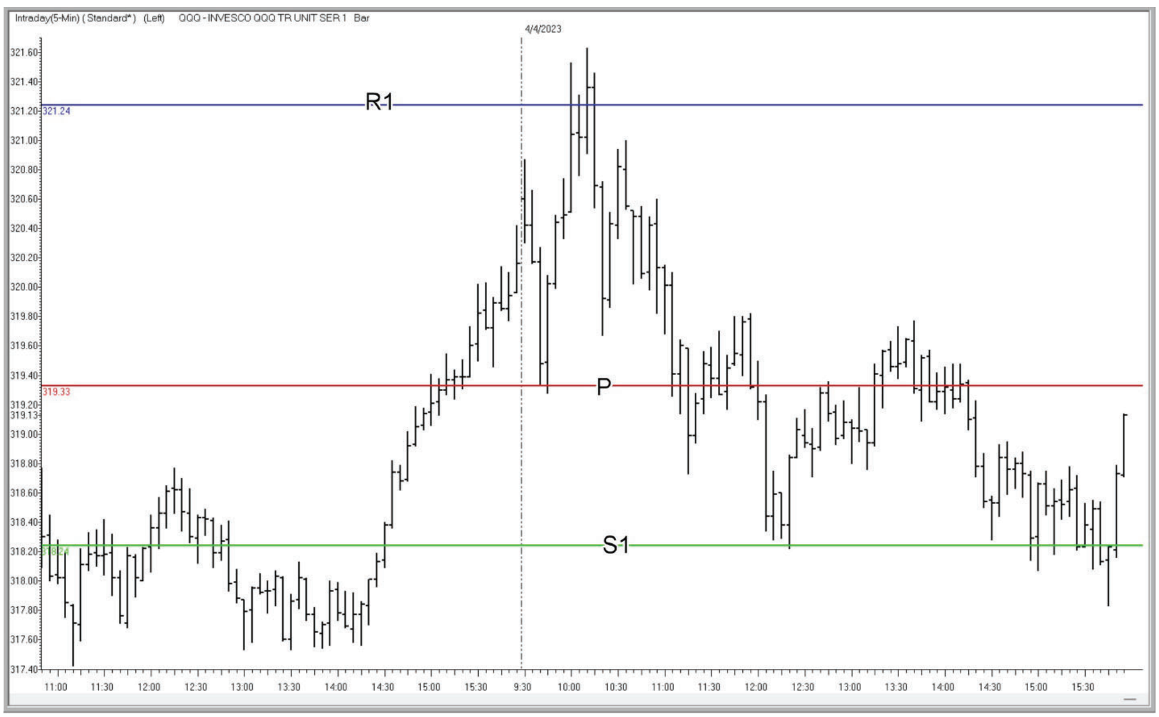


Figure 7 – Pivot lines establish the trading fulcrum.

When the price extends just beyond R1 (321.24) and then reverses, the assumption is that the price will return to P (319.33). When the price consolidates and breaks down through P, the assumption is that the next move will be to S1 (318.24). The reversal from S1 would most likely send the price back to P, and the R1 – P – S1 range is where we would normally expect price to oscillate over the course of the day.

When price opens above R1 or below S1 and maintains its extension, then that level will act as the fulcrum. R1 or S1are then treated as if they were the central pivot.

Pivot extensions beyond R2 or S2 on the open in QQQ are rare, and in the instances in which they occur, there is an extremely high likelihood of a reversion toward the R1 or S1 pivots. This fact is the basis for one of the QQQ volatility strategies I will present later.

Volume Weighted Average Price

We are all familiar with moving averages and the fact that they act to smooth price action over time and make it easier to "look into" chart data and see the trend. But moving averages only provide a snapshot of what is right in front of us. Their usefulness is mitigated by the reality that a trader looking at the chart in their absence should be able to see where the moving averages would be plotted. In other words, they show us what is already apparent.

The volume-weighted average price (VWAP), by contrast, provides information that is not so obvious. The VWAP takes every transaction in the market and multiplies its price by volume, then divides it by the total number of shares traded.

The formula includes the cumulative typical price for each period. This value should be familiar to you as it is obtained with the same formula that we use to calculate the central pivot line.

$$VWAP = \frac{\left(\frac{High + Low \ + Close}{3}\right) \times Volume}{Cumulative\ Volume\ Since\ the\ Open}$$

Market makers and floor traders at the NYSE point to the importance of this calculation in their work. In my conversations with them, the most common complaint about their business is that "it's all about the VWAP." Their compensation is tied to their buying and selling relative to where the VWAP is at the time their orders were placed.

The dynamic here is that the trader who is given a large order to buy or sell is compensated for the trades based on where his or her activity in the market was relative to the VWAP at the time. Consider the potential impact of this fact on the value of the indicator to intraday traders.

If we know that the insiders are rewarded for buying or selling on the "right side" of the VWAP, then we know what the big players, the ones capable of moving a market, will do when price moves away from our benchmark. Consider an example that should make clear why the VWAP is a game changer for traders who know how to use it.

Let's say a mutual fund places an order to sell 100,000 shares of security XYZ. Your job as the trader is to handle the order flow and not move the market. XYZ typically trades about 600,000 shares per day, so your trade will have market impact. If you are not careful, you will move the market. To make matters worse, your compensation is indexed to the session VWAP. If you liquidate the shares significantly below the VWAP, you won't receive much of a paycheck.

The market opens, and you begin liquidating shares at $50. You are trading into heavy opening order flow, and 10,000 shares are done by 9:40 am. By 10:00 am, other market participants spot the imbalance in XYZ and start selling or even shorting the stock. You now liquidate at $47, but the session VWAP is at $50, jeopardizing your compensation.

With a negative excursion from the VWAP, you have two choices in front of you. You can step aside and let the market pull back to the VWAP or higher. If getting out of the order flow does not move the market back into the higher range, you can start buying shares into your inventory to pull bottom pickers into the market. The goal of either strategy is to cause a pullback on the stock chart. You want to bring the price closer to the VWAP so that you can resume liquidating shares for your client. This exercise is repeated throughout the session or multiple sessions until your order is filled.

If it seems unlikely that this is how markets work, I will point out my friend Phil, who was a twenty-five-year veteran of the NYSE trading floor, bought his beach house in the Hamptons with his earnings from a single IBM trade. He liquidated a giant holding for a client without moving the market, and he was compensated for it commensurately.

The VWAP needs to be calculated starting at the first tick of today's cash session and continues recalculating all day. And while the impact of the indicator is most obvious for individual stocks, its gravitational effect on the index ETFs is very apparent. Figures 8 and 9 illustrate this nicely.

Figure 8 – A bullish market moves lower, only to find the VWAP in late trading.

In Figure 8, we see the QQQ sharply higher at the open. It oscillates around the VWAP in early trading, then climbs back and stays anchored going into the closing bell. If we were to examine the NDX 100 components over the same period, we should see the same behavior as the individual stocks are bought and sold by Wall Street.

Figure 9 – The market for QQQ extends below then above the VWAP.

In Figure 9 we see the market make a larger extension below and above the VWAP. A trader who moved large blocks of the QQQ or the component stocks throughout the day could bring the average cost of transactions in line with the indicator by timing orders over the course of the session.

The examples provide context. By knowing that the VWAP will have a gravitational effect on the stocks we trade, we can adjust our thinking and become more patient. An extension from the session VWAP in "normal market conditions" always has me looking for buying or selling opportunities that are in the direction of the day's trend. My entries are always triggered by a pullback. And the pullback needs to be to a level of support or resistance that is confluent with the VWAP.

When markets move a little faster than "normal," a variation of the VWAP can be a game changer. Next, I will discuss the anchored VWAP or AVWAP.

Anchored
Volume Weighted Average Price

The VWAP provides a gravity point for trading throughout the session. But when price moves out of a trading range rapidly, the indicator's value diminishes. It can take hours for price and VWAP to re-converge, and during this time, the opportunity cost can make traders impatient and impulsive. The psychology of missed opportunity plagues even the most experienced among us. These periods are the source of many losses, as positions are built in the middle of trend moves, only to be shaken out on run-of-the-mill pullbacks.

In the late 1990s, my friend Stuart Townsend owned RealTick. This was years before he developed the Archipelago (ARCA), and years before his software program would become a standard among institutional traders. Back then, RealTick was a retail trader's power platform, and Townsend Analytics was dedicated to pushing the limits of platform development. Part of that push was taking industry-standard indicators and extending their capabilities and utility. This led to the development of an anchored VWAP (AVWAP).

AVWAP functions by isolating trading activity in time. When a stock trends quickly higher or lower, the session VWAP is left behind. By anchoring the beginning and end of the analytical period to the peak and trough of a move, Townsend made it possible to find the VWAP for a buying or selling surge. The AVWAP can also be isolated for accumulation or distribution ranges that develop after these periods of markup or markdown.

If the idea of manipulating the VWAP in this fashion seems like an attempt at sorcery to you, then consider that this has been a source of profitable trading ideas for Julie and me for many years. The key to profitable deployment is understanding the boundaries and limitations of what AVWAP is indicating.

Figure 10 shows the AVWAP applied to the intraday chart of the QQQ we looked at in figure 9.

Figure 10 – The anchored VWAP of a 1 – 2 trend move.

When QQQ makes an excursion from its VWAP in early trading, the value of the indication diminishes until much later in the session. Developing a VWAP for the range between the peak and trough of the trend move allows us to determine where the "value line" for the swing move is. The AVWAP is labeled on the chart, and I generally use a heavy orange line to mark the level at which it occurs.

I use the AVWAP as a very short-term indication of potential future inflections. Later I will discuss my opinions as to the validity of recurring opportunities. For now, I'll just say that I do not like to go back to the well too many times. First and second tests are where I like to get in front of opportunity. After that, I am content to sit on the sideline and wait for a new trend move and VWAP.

In Figure 10, the 1 – 2 move has an AVWAP at 318.41. The trend is definitely lower, and the pullback (3) provides the opportunity to short into a trend-following move back to 317.71 (4). I will determine the development of confluence-based targets later. Figure 10 provides a great illustration of how I use the AVWAP in my trading.

Volume by Price

Most traders plot volume on the horizontal axis of their charts. This is volume as a function of time. Each volume bar represents trading activity that happened as a function of time compression. Each volume bar on a five-minute bar chart represents the number of shares transacted during a particular five minutes of the session. This is a valuable snapshot of the interest in a trading vehicle. When volume increases or decreases dramatically, it tells us a lot about the strength and sustainability of a move in price.

Volume by price (VBP) is less frequently used and tells us something different. It is plotted on the vertical axis and shows how many shares are transacted at a particular price over the day without regard to time. There are several implementations of VBP in various analytical platforms. The most basic is a tick-by-tick count at each price level, forming a raw-data histogram along the vertical axis. This information can determine where a stock may be headed and point to opportunities to take advantage of.

An increase in buying activity at a certain level while the chart is trending higher is generally interpreted as indicating that the price is about to increase. Conversely, when the trend is down, and there is an increase in selling activity at a price threshold, the indication is more downside pressure. Careful monitoring and thoughtful interpretation are vital to using the histogram to create a profitable bias.

The utility of VBP peaks when it is used after the fact. Even with the benefit of nearly three decades as a stock market operator, I find it impossible to tell whether VBP is buy or sell-side while it is forming. I need to see the data after the swing high and low are in place to interpret each threshold level's importance accurately. In this sense, VBP is like the natural support and resistance levels I plot on my charts. Seeing is indeed believing.

The version of VBP that I use was developed with Townsend many years ago for RealTick. It is different from the typical volume profile offered in many charting applications. RealTick VBP is an adaptive model that rebalances histogram bars throughout the day to account for market impact of various pricing levels. As threshold levels develop, trading activity becomes significant and histogram plotting is constantly reinterpreted. The frequent re-rendering of the interpretation is frustrating for traders plotting it for the first time. I find it enlightening and indispensable.

Figure 11 illustrates VBP threshold levels on the chart from the prior figure. In this case, the snapshot is taken at 11:30 am, and the levels labeled 1 and 2 mark the boundaries of a data cluster. This generates a good trading scenario when the price returns to the AVWAP level we identified in Figure 10.

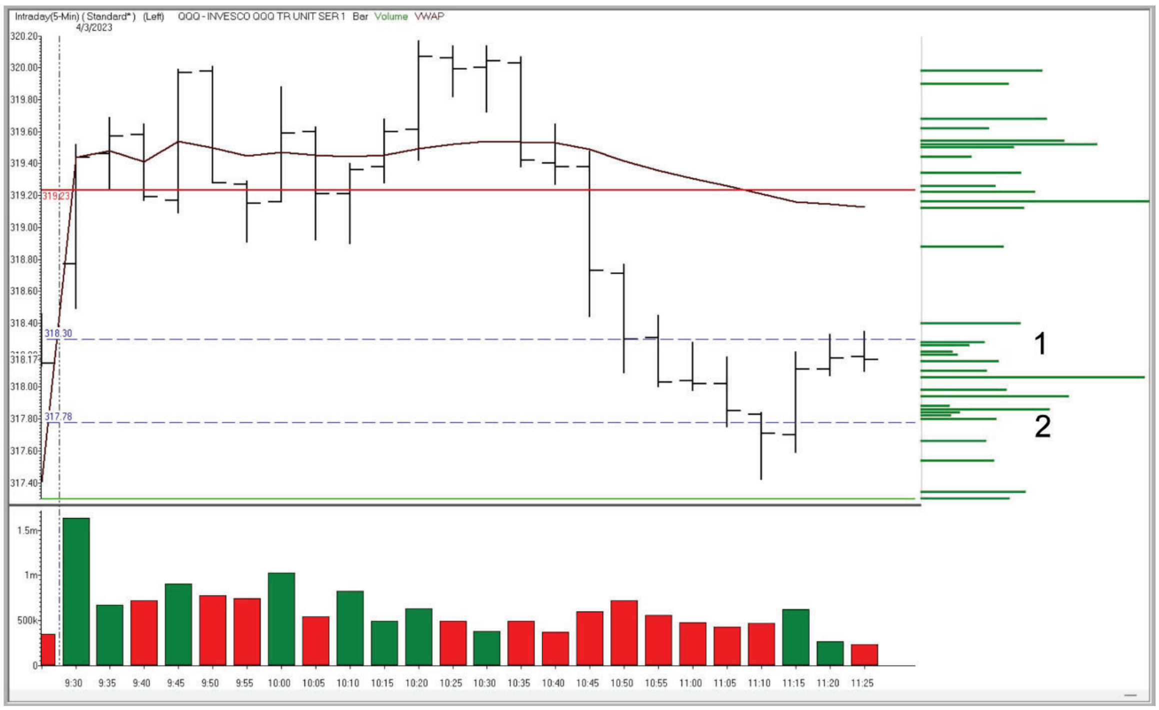


Figure 11 – VBP clusters bracket trading activity.

I will not get ahead of myself here by discussing confluence of indication. For now, I want to limit the conversation to what is happening with the VBP indication.

When the 10:35 – 11:10 markdown reverses, it hesitates at the upper boundary of the VBP cluster as noted by the blue dashed line (1). The clustered histogram data between the areas labeled 1 and 2 on the chart suggest that the move higher to level 1 may meet reasserted selling pressure and force price back down to the bottom of the cluster (2).

Figure 12 shows the result of the inflection at point 1 after the reversal of the trend move.

Figure 12 – VBP cluster impact on trending price reversion.

The 52 cent per share traded move through the VBP cluster in QQQ provided a nice gain on the equity trade and could represent a much larger profit on a percentage basis for those trading the Nasdaq 100 futures market.

The VBP plot can be used to trade the resumption of a trend move like the one in Figure 12. It can also be used to capitalize on breakouts when price moves through a histogram boundary as it did at 14:30 in figure 12 (3). In any deployment, VBP can identify key areas of price support or resistance. It can indicate that a trading vehicle will move significantly and offer potential trading opportunities.

Statistical Envelopes

Anyone familiar with my work knows that statistical process controls form the foundation of my patterns. The most basic of these is a focus on mean reversion, particularly when interpreting volatility.

Price and volatility mean reversion are two essential concepts in stock day trading. Price mean reversion is the idea that prices eventually return to a historical average or trend line. Volatility mean reversion refers to the tendency of stock prices to return to their long-term average level of volatility. Both principles can be used to identify potential entry and exit points.

I have used a volatility mean reversion model for trading QQQ for many years. The method uses a measure of volatility to calculate an average and a statistical model to plot values representative of two standard deviation excursions from that average.

Two standard deviation moves from an average represent a statistically significant anomaly that has a 95% probability of reverting to (moving back toward) the average.

The volatility-based statistic is a great tool but is difficult to calculate in some software platforms. I have found that a 14-period average of closing prices generates a very similar set of envelopes that can be used to predict price reversals with nearly identical precision. Most trading software has the study preprogrammed as Bollinger Bands, which are named for my friend John Bollinger, who popularized them.

The chart in Figure 13 shows the envelopes applied to our chart of the QQQ

.

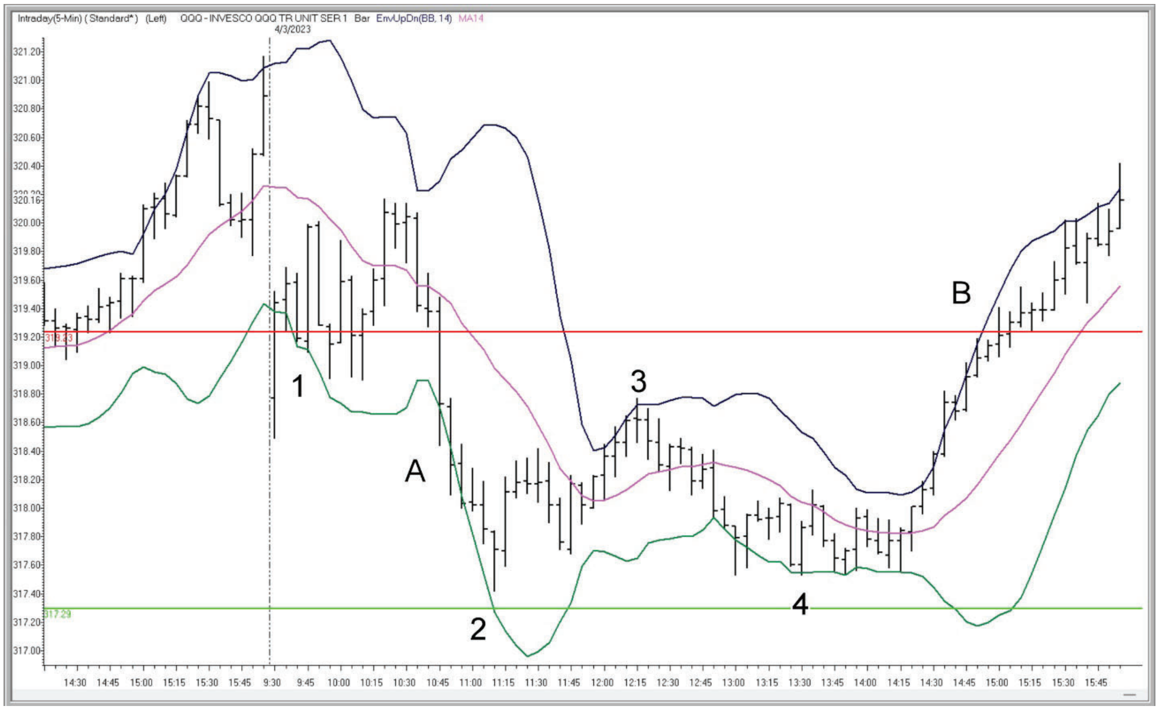


Figure 13 – 2SD bands of average closing price indicate possible turning points.

As is demonstrated in the chart, 2SD excursions frequently revert to the mean price. The average is plotted in purple, with high and low envelopes placed two standard deviations above and below. Multiple reversion moves are evidenced throughout the session (1, 2, 3, 4), but traders also need to be aware of the tendency for distributions to shift and change the statistical parameters. This tendency is illustrated at points A and B on the chart. In both cases, price makes an extension move that changes where the 2SD level inflects.

Fibonacci Retracement Levels

In the sixth century, Indian mathematicians referred to a sequence wherein each number is the sum of the previous two numbers. In the 1200s, Leonardo Bonacci (later known as Fibonacci) popularized the utility of the sequence in European mathematics. The retracement levels commonly used by traders emanate from the sequence itself and have been used to predict everything from the spiraling of seashells, the expansion of growth rings in trees, the expansion of the universe, and the expansion of a population of rabbits. The number sequence starts as follows and expands indefinitely:

0, 1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89, 144, 233, 377, 610…

There are many Fibonacci ratios. All of them are derived by dividing one number by another in the sequence. The ones of interest to most traders are 61.8% which is calculated by dividing a number by the next in the sequence; 38.2%, which is generated by dividing a number by the second higher in the sequence; and 50%, which is not a ratio in the sequence at all, leading many to postulate that the power of the calculations is the product of a self-fulfilling prophecy.

It is of no concern whether the so-called "golden ratio" is magical or just something many people believe in. Market behavior is driven by human psychology. That psychology is driven by belief systems that generate self-fulfilling prophecies. Anticipating their impact is enough to provide a slight edge in trading, and I'll take any advantage I can get.

The Fibonacci expansion and retracement tool is available on every trading platform I know. The general problem with the tool is that it includes too many infinite ratios that can be derived from the sequence. There are so many ratios that one of them is always going to get hit, and the ambiguity this creates can make the tool seem useless.

In my trading, I have always used the 38.2%, 50%, and 61.8% levels and ignored the rest. I follow both the retracement and expansion levels for each, and I feel this puts me in front of the bulk of trader psychology that is out there trying to catch Fibonacci inflections.

To set the tool up to mark all the levels on the chart, I set the parameters to include .382, .500, .618, -.382, -.500, -.618, 1.382, 1.50, and 1.618. With these settings in place, when I use the tool to select a swing low and a swing high the peak to trough measurement draws the retracements inside the swing move. It also plots the expansion moves at the same ratios above and below the swing.

Figure 14 shows the result of plotting the study using my parameters.

Figure 14 – The Fibonacci sequence playing out on the QQQ.

The arrow marks the trough-to-peak move that I measured on April 10, 2023. QQQ retraced the move and inflected at the 61.8% retracement level (1). It then moved higher to the 38.2% expansion (2) and consolidated for nearly an hour before moving up for a precise test of the 50% expansion (3).

Over the course of a trading day, the sequence will generally play out many times. The key to using this tool is to focus on the obvious trending moves on the chart and avoid trying to curve-fit data points to plot what you hope to find. This tool relies on mass psychology to drive price, and the best way to find its utility is to see what most people would identify as evident on the chart.

The Stochastic Oscillator

Decision-support tools are just what the name implies. They reframe the information in front of us in a way that provides confirmation or doubt about what we think we see. This charting tool class is indispensable in some traders' minds and secondary in my analytical process. I lean heavily on primary tools and use indicators like the stochastic oscillator as a quick-and-dirty way to encapsulate market data.

A stochastic is an oscillator based on the position of the closing price for a specific period relative to the range over the same time. George Lane developed four stochastics as decision-support studies: %K (%K Fast), %D (%D Fast), %D Slow, and %D Averaged (%Da). I plot %K, and %D slow on a chart of the NDX 100 to indicate momentum or trend strength.

The following are the descriptions and calculations for %K and %D Slow as provided by RealTick. The following pages are provided courtesy of EZE.

% K Fast

Fast %K measures the relative position of the close as the difference between the lowest price for the period and the close of the period. This number is expressed as a percentage of the range for the period. When creating %K you must select the period, i.e., the number of intervals to include in the period.

Formula:

$\%K = ((C-L)/(H-L))*100$

Where:

C is the closing price for period n.

L is the lowest price over period n.

H is the highest price over period n.

n is the period length.

% D Slow

Fast stochastics can be very choppy. To reduce the choppiness, increase the number of periods or use the further smoothed form, %D Slow. %D Slow is a moving average of %D. To create %D Slow you must select the number of intervals to include in the average as well as the parameters used to create %K and %D. Lane uses three periods to calculate %D Slow.

Realtick's Chart window calculates all values to 15 decimal places, then rounds the value to 2 decimal places or fractions (depending on what the security uses) to display the value.

For %D, RealTick uses a simple moving average on the %K data.

For %D slow, RealTick uses a simple moving average of the %D to get the first term, then uses the formula for a p period moving average for the xth term in the series to be averaged to get all successive terms in the series. This is a shortcut to conserve memory.

$\%DSlow_x = (p-1)/p * \%DSlow_{x-1} + (1/p)*\%D_x$

Example: If you do a 10 period %DSlow, the %DSlow is a simple moving average for the first term. The %Dslow for the second term is 9/10 of the %DSlow for the first term plus 1/10 of the %D for the second term.

For % D slow average, RealTick uses a simple moving average of the %D Slow to get the first term, then uses the formula, for a p period moving average, for the xth term in the series to be averaged:

$\%DSlowAvg_x=(p-1)/p * \%DSlowAvg_{x-1} + (1/p)*\%DSlow_x$

to get all successive terms in the series. This is a shortcut to conserve memory.

Example: If you do a 10 period %DSlowAvg, the %DSlowAvg is a simple moving average for the first term. The %DSlowAvg for the second term is 9/10 of the %DSlowAvg for the first term plus 1/10 of the %DSlow for the second term.

I have provided the equations used to calculate the stochastic oscillator for two reasons. First, I do not believe that a trader should plot a study without knowing its purpose and how it is calculated. Second, I want to illuminate the fact that when George Lane developed the oscillator in the 1950's, he never meant for the indicator to provide overbought and oversold threshold levels. The stochastic is a measure of momentum and trend persistence.

The math in the equations is a comparative function of a security's most recent closing price to the highest and lowest prices during a specific number of bars on a chart. It gives readings that oscillate between 0 and 100. Higher values are indicative of upward momentum and pressure. Decreasing or low values indicate potential weakness or increasing downside momentum. A 0 reading represents the lowest point of the trading range. 100 indicates the highest point during the evaluated time period.

Figure 15 is another look at our QQQ example, this time through the lenses of stochastics.

Figure 15 – The stochastic oscillator provides a gauge of momentum.

The obvious conclusion here should be that the indicator has limited utility. The traditional interpretation would state that when the oscillator bounces off the zero level, a sharp crossover of the %D slow line by the %K line may suggest a move higher is in the making. The inverse is the interpretation at the 100 level. However, examining thousands of charts over the years demonstrates that this usage is inappropriate and generates many false signals.

I think that the best use for the oscillator is as a measure of price persistency just as suggested by its creator George Lane. I find it most helpful when applied to symbols that do not have volume data. I use it exclusively on the Nasdaq 100 index (NDX).

The Relative Strength Indicator

If you have been watching my intraday Game Plan video presentations, you have seen this indicator on my charts of the QQQ. Welles Wilder developed the Relative Strength Indicator (RSI), which is an overbought oversold oscillator expressed on a scale of 0 to 100. It is the ratio of the average up closes for a certain number of time intervals divided by the sum of the average up closes and the average down closes for the same period. This ratio is multiplied by 100 and generates a plot that acts as a decision-support tool.

It should be noted that RSI has no relationship to Relative Strength as reported by Investors Business Daily. Though the names are the same, the values generated by each are discreet and uncorrelated.

The equation for RSI where RS is the ratio of the average of n period gains divided by the absolute value of the n period losses is as follows:

$$RSI = 100 \times \frac{RS}{1 + RS}$$

The threshold levels most technicians use to interpret the behavior of the oscillator are 30 and 70. A cross below 30 is generally considered bullish, while a move above 70 is bearish.

RSI moves slowly, making it easier to follow than stochastic oscillators. Figure 16 shows the plot on QQQ.

Figure 16 – The Relative Strength Indicator

Notice in Figure 16 that each cross above 70 (1, 2) preceded reversals lower in price. Keeping the oscillator on a chart allows me to monitor potential signals and provide confluence of indication to trading ideas that I have in place.

Putting The Pieces Together

Confluence is the key to the kingdom when staying on the right side of the market is the goal. You will never beat the market at its own game. But you can ride its coattails and succeed by listening to what it tells you. It speaks in riddles, putting puzzle pieces in front of you one at a time. The hardest thing for most of us is waiting for everything to be on the board before acting. We naturally jump on the momentum when the market starts a parabolic move. It's the riskiest of all trades, long or short, because the entry is in the middle of a trend, far from the logical stop loss. But when all the pieces are in place, the odds shift, and we see the market through the lenses of reality. We can find a logical reason to enter with controlled risk. Missing the big move is irritating, but waiting for the logic of confluence is the road to opportunity and profit.

The tools we discussed earlier each have strong merits. They are a great way to shed some light on what the market is doing. Taken as a group, their confluent indications can be like having a crystal ball. We are in the business of predicting market inflections. And when price interacts with the support and resistance bands, the AVWAP, VWAP, VBP, 2SD envelopes, RSI, and Fibonacci retracements and expansions simultaneously, those inflections become easier to predict and far more reliable.

From the section on psychology, we know that the problems with confluence are:

1. Waiting for it feels like missing the boat, as we are allowing the market to move without us in anticipation of price returning to the confluent opportunity.
2. When a confluent trading idea fails, the recency effect steps up with an "I told you so" that makes it hard to take the next trade.
3. When we miss a profitable confluent entry, we often feel the need for revenge, leading traders to jump the line into the middle of a trending move. This inverts the reward-to-risk ratio and leads to self-doubt and a negativity bias when stops must be taken.

We also know the positive psychological effects of waiting for the trades to develop with these converging indications:

1. There is a higher probability of a successful outcome when price inflections occur around the convergence of our tools.
2. Whether a trade results in a profit or a loss, the unambiguous nature of the cause puts us in the position to work on the next opportunity with clarity. All the pieces were in place, and they worked or didn't. But there is no search for internal or external blame. A loss doesn't leave us questioning our ability or intelligence. A gain doesn't lead to overconfidence or recklessness.

Meaningful intersection doesn't occur on the charts until the markets have settled in. The opening bell is generally accompanied by shifts in the probability distribution and wide swings in price. I generally wait until 11:30 ET to place trades on the indices. By then, our morning trades, which rely on high volatility, are usually done, and the stable, slow-moving index opportunities start to pop up on the charts.

The chart in Figure 17 illustrates the impact of confluence and timing. It also points to the reasoning behind plotting the indications on multiple charts, as putting everything on one graph is confusing, even in a veteran's eyes.

Exercise

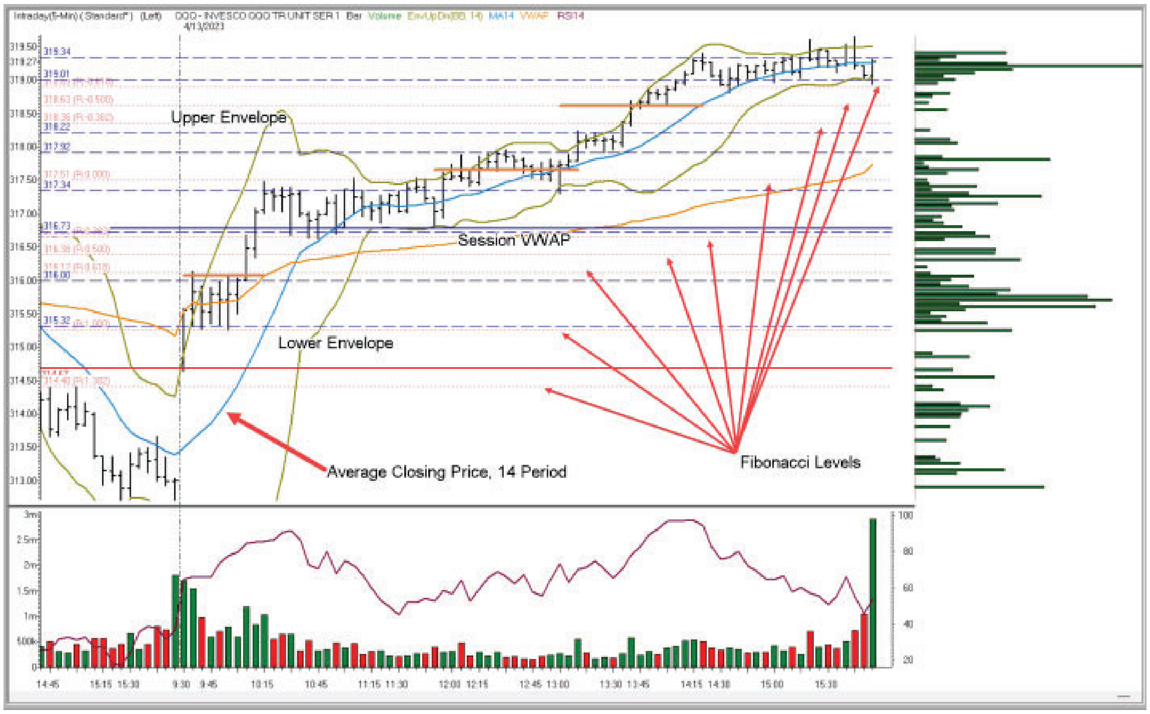


Figure 17 – AVWAP, VWAP, VBP, 2SD envelopes, RSI, and Fibonacci Levels

The dashed blue lines in the figure are the support and resistance levels. The heavy orange lines are the AVWAPs. I have labeled the other indications directly on the chart to assist in interpreting quite a mess.

You should notice a few areas of confluence on the chart. Spend some time looking for and labeling them before moving on to Figure 18, where I have inserted my interpretations of what was happening over the day.

This is how I saw the chart while working with it on April 13, 2023. I work through these setups with a family office client and close friend throughout the day, so I frequently have to espouse my beliefs about what will happen. That is a helpful exercise in promoting follow-through.

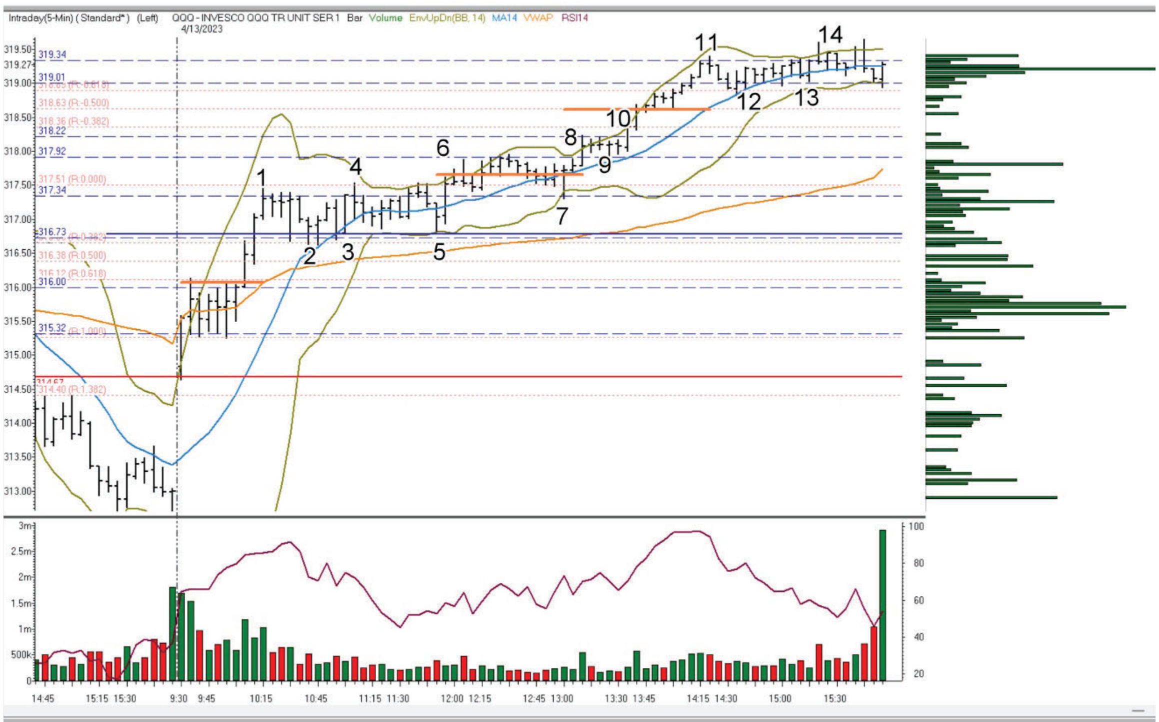


Figure 18 – My interpretation of what the chart was telling me.

The price of QQQ moves to a swing high during the opening hour of the session (1). I marked the high as resistance formed there over several bars. When the stock traded lower and found support at the R1 pivot line (2), I noted the support and established a long position on the next test (3). The exit is at the next test of the high resistance (4). Another test of the pivot level (5) results in another profitable exit at (6). Each entry in the range yields .61 per share traded.

After hitting the profit target and establishing a new swing-high resistance level (6), the stock consolidates, and the range low provides another entry opportunity (7). Then another move higher creates another natural resistance line (8), drifts back into the support/resistance level (9), and triggers another long-side entry. The exit (10) represents another .30 per share.

The day showed trend persistence right into the closing bell, with an overhead inflection that established resistance (11), and the retracement to natural support and a VBP node (12) set up a final profitable long entry (13) with an exit for .30 per share at the threshold (14).

It may all seem tedious and complicated, but when you look at the chart, you should see a lot of converging indications pointing you to each trade. Here is what I was looking at for each trade initiation in order:

1. The entry at point 3 on the chart is earlier than I would typically take a position. But the reversion move to the 14-period average price from resistance finds confluence with a VBP node, natural support and resistance, and the R1 pivot line. First tests of pivots have the highest likelihood of reversing, and this confluence represents an excellent opportunity for profit.
2. The entry at point 5 on the chart has all of the characteristics of the entry at point 3. It also makes a 2SD excursion from the mean, indicating a 95% reversion probability. Also note that the session VWAP is racing higher, indicating that a bounce from the confluence level is highly likely.
3. The next entry (7) again finds confluence. This time natural support and resistance overlap with a significant VBP threshold and another 2SD excursion.
4. The entries at levels 9, 12, and 13 find similar confluent forces that suggest they will continue the push into the close.

These entries and exits are sequenced to minimize market exposure and risk. They generate $1.82 per share traded, capturing 70% of the positive price action in QQQ from 10:45 am – 4:00 pm, with a total time in the market of just under an hour. That is the power of trading confluence.

Consider the price action in Figure 19. Notice that two hours of trading are on the chart to this point and that the early trade provides context and allows us to anticipate support and resistance based on the order flow in the opening range. The confluence at the inflection of the last bar on the chart allowed us to enter the market. The profit objective for the trade was at the overlap of mean reversion and the AVWAP and represented .35 per share.

Figure 20 shows the exit at the target. The best discipline and psychology is to bracket these trades and let the market take off the position at the target or the stop. Leaving the trade open-ended always feels like a good idea but fosters a lot of dissonance. Plan the Trade – Trade the Plan.

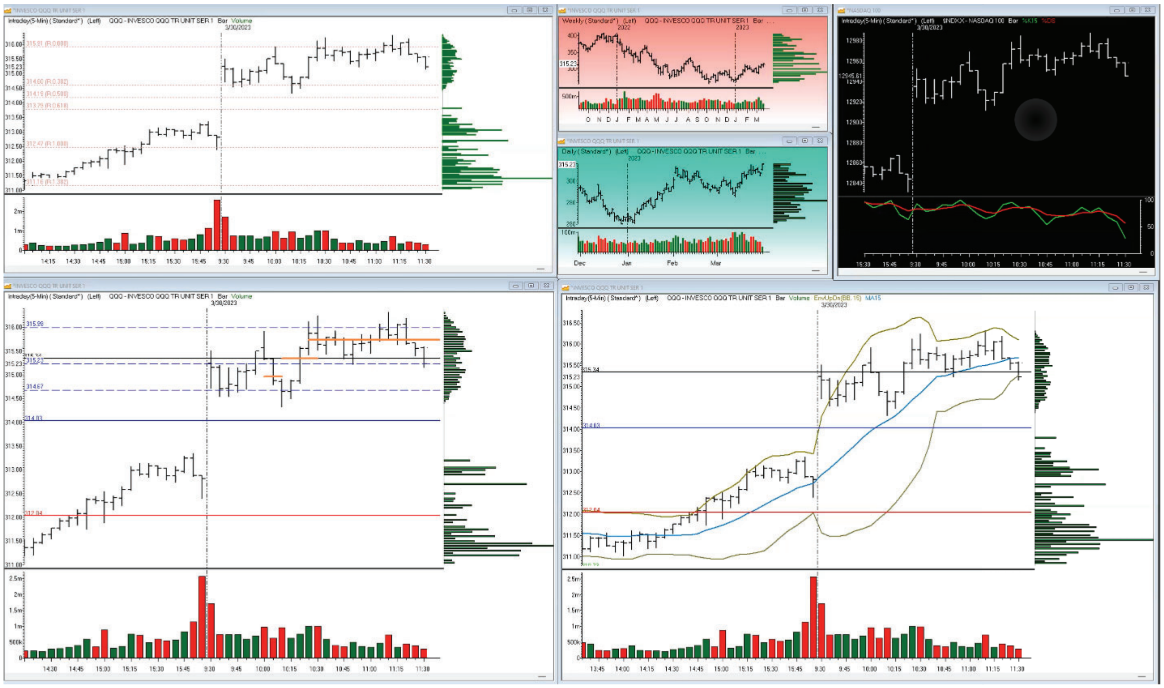


Figure 19 – Support, resistance, pivots, and a 2SD excursion form confluence.

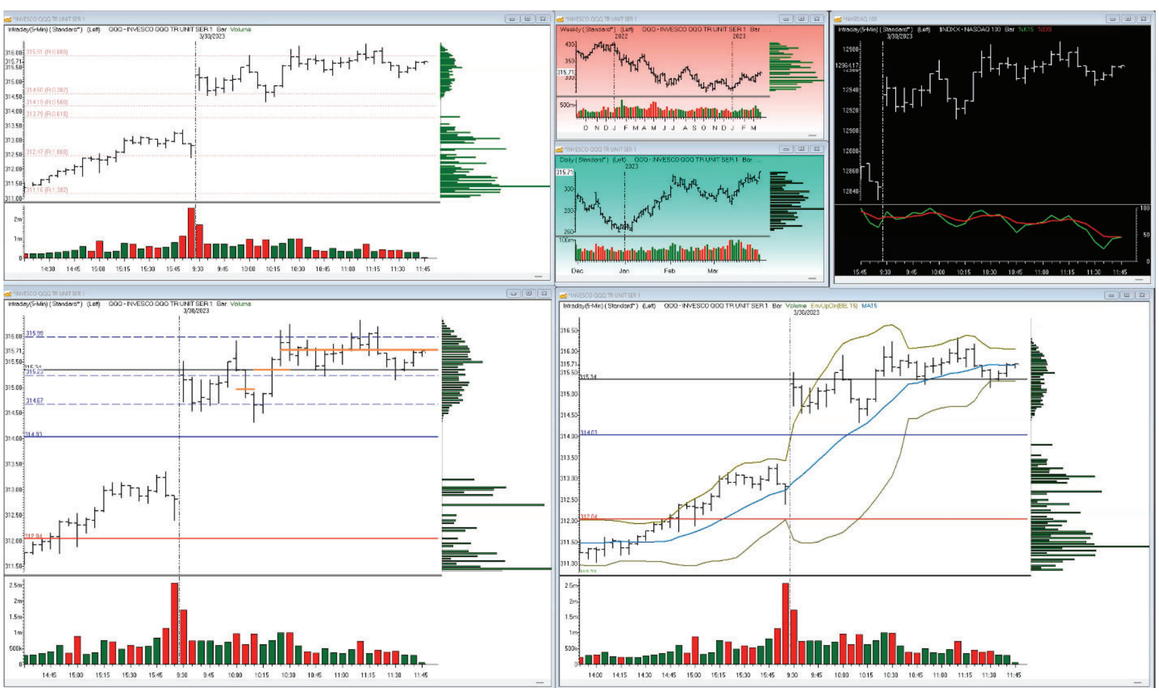


Figure 20 – The move to the AVWAP and mean price level trigger the exit for our bracket.

Exercise

The chart in Figure 21 shows the QQQ later in the same session. Consider what the charts suggest and create a plan for an entry, target and stop loss .

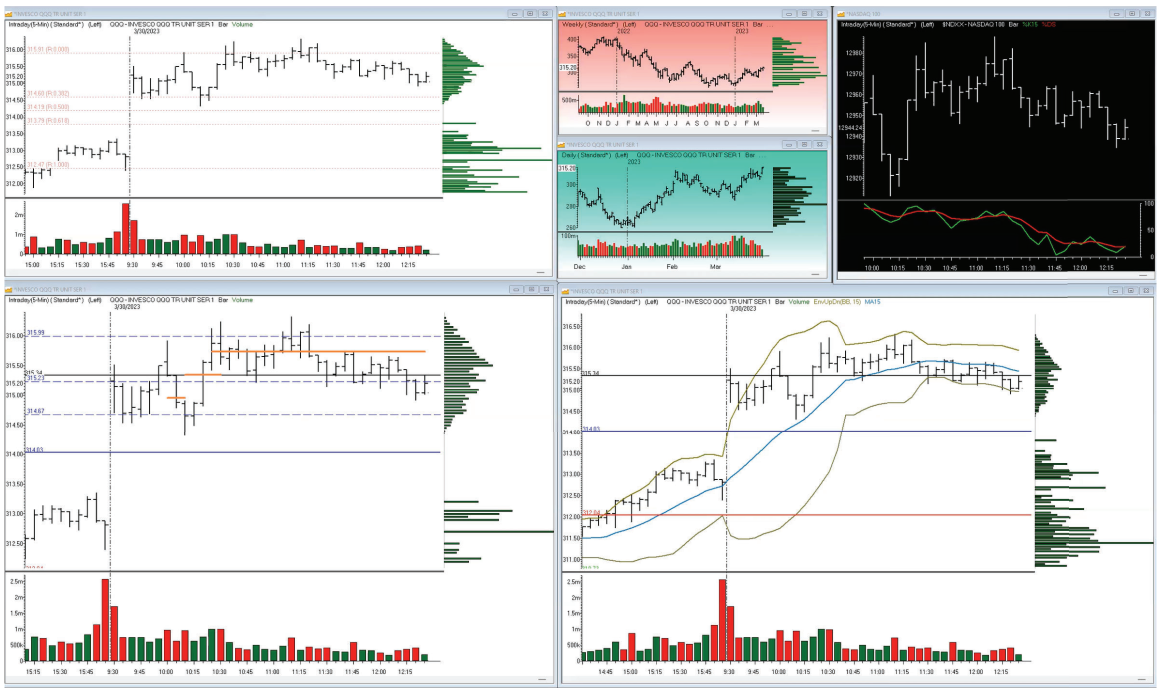


Figure 21 – The rangebound QQQ signals opportunity.

Notes:

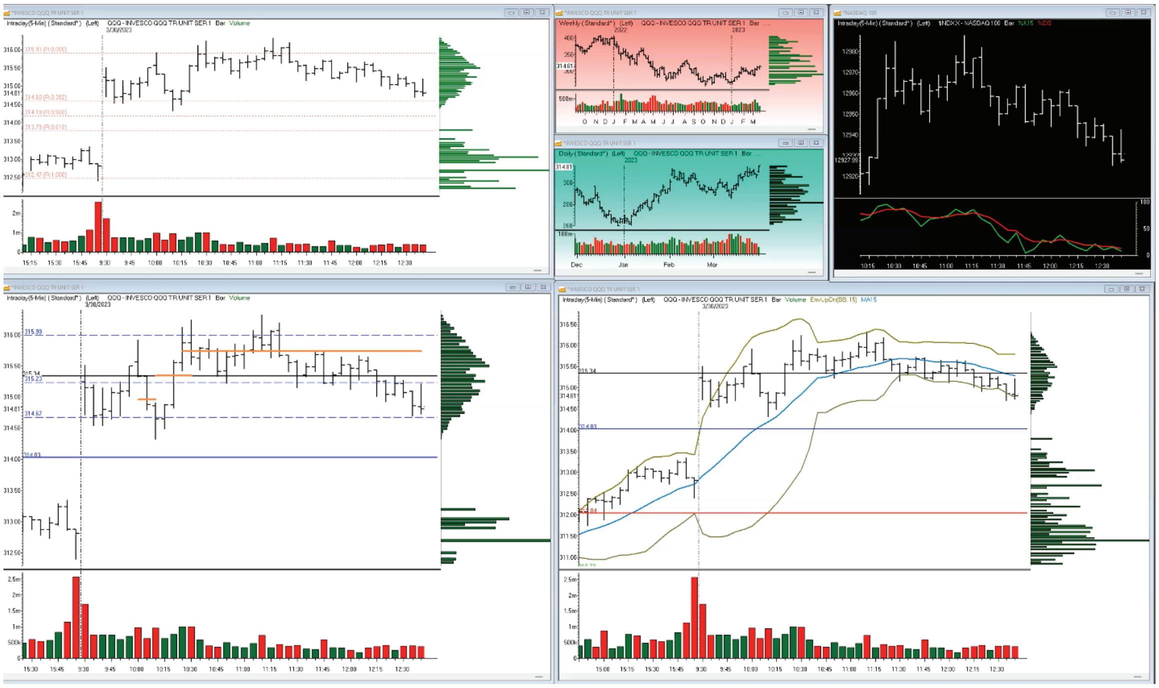


Figure 22 – Converging VBB, support, early AVWAP, and a 2SD reversion.

The trade resulted in another .50 per share profit (Figure 22), as the order flow pushed QQQ down to opening range support and, presumably, some program trading orders. The sharp move earlier in the session from this same level suggested a move higher to the confluence of R1, resistance, 10:15 AVWAP, and mean closing price. The 314.70 entry targeted 315.20 for a profit of .50 per share traded. Notice that the profit objective was met by program selling and that the reaction move back down into the bar's range was very fast. Having the bracket in place when the trade was initiated ensured locking in the gain.

Figure 23 is a final exercise. Look at the chart and develop a plan based on the price action in QQQ on April 3, 2023. Try to spot as many overlapping indications of how a trade would play out as possible.

Exercise

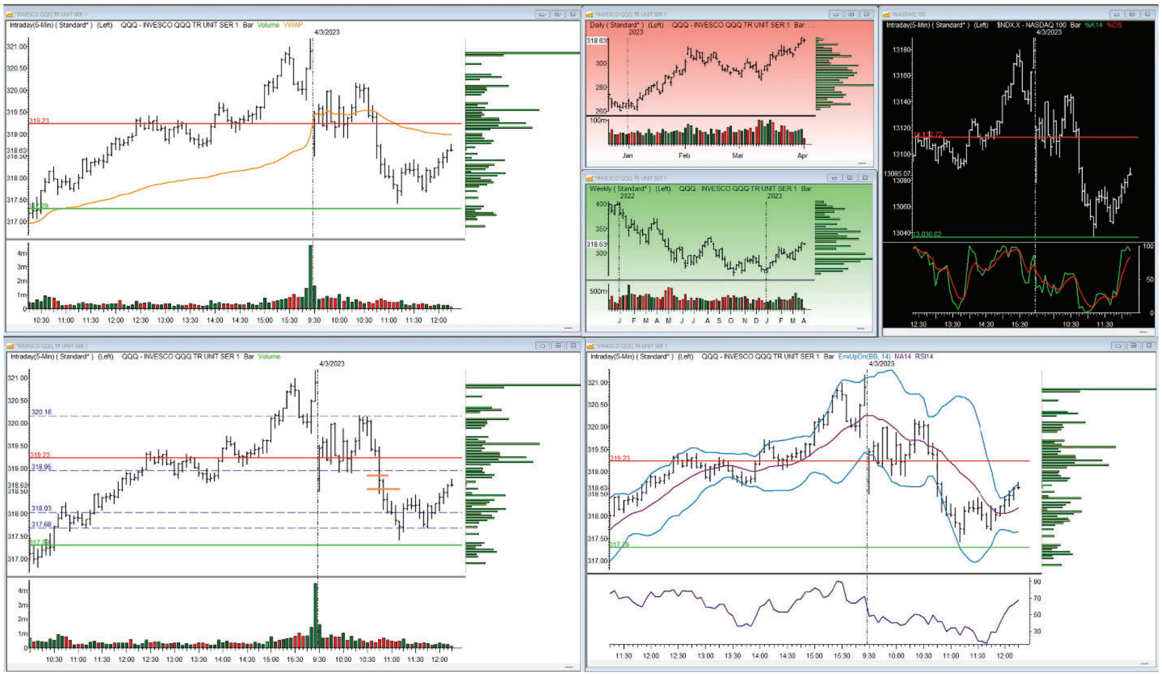


Figure 23 - Develop a plan of action based on the chart data.

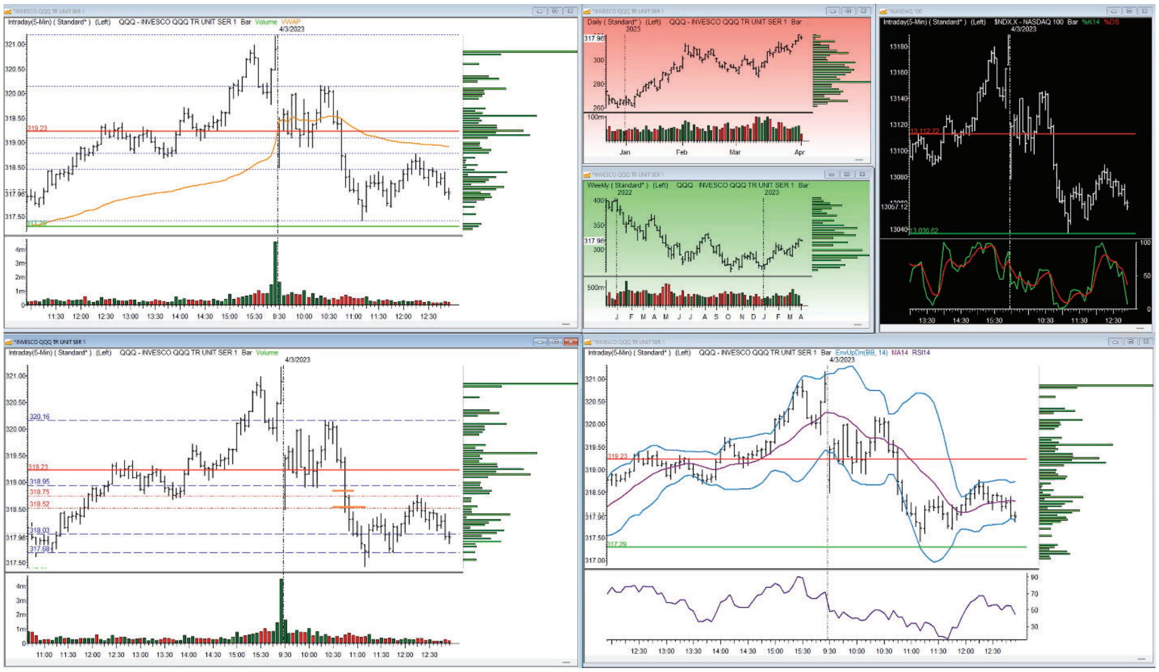


Figure 24 – My logic for a short sale in QQQ.

QQQ looked weak during the session when I looked at the data. The ETF was net-negative on the day and net-negative from the open. The order flow for the session was sell-side, and the price stayed below the central pivot for most of the day. In Figure 23, the AVWAP threshold levels were nicely aligned with VBP, and the pullback bar reached the 2SD level, which overlapped with 318.75 support from early trading. 318.03 represented a good target because it was earlier support and represented a 2SD extension move lower.

These examples represent a few opportunities to take a position when all the stars align. Being patient is the key to getting in front of the best profit opportunities. The biggest hurdle to profitability is boredom. If you get bored, bad trades are sure to follow. Focus on what is right in front of you and whether it represents a solid trading idea. The only time you should even consider taking a position is when multiple factors support your idea.

The best way to stay on the "right side" of the market, more often than not, is to have a checklist of all the factors contributing to trade success. The more boxes you can check before taking a position, the more confidence you'll have in your idea. The courage of your convictions is very relevant when it comes to getting in front of opportunities and staying with a plan even when it doesn't seem to be breaking in your favor. The map in Figure 25 visually represents what I consider when mapping a potential position.

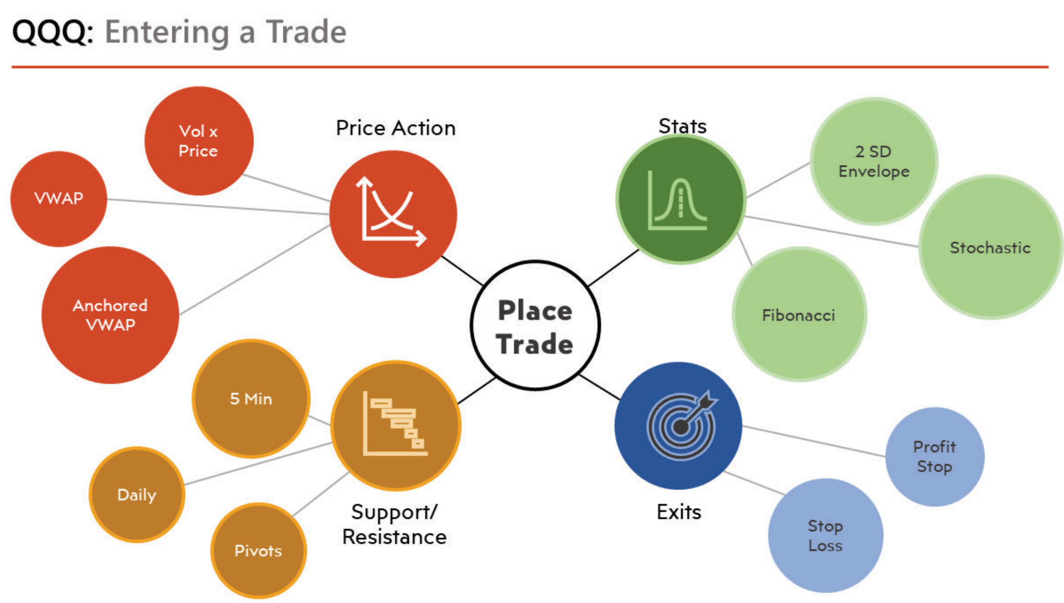


Figure 25 – The building blocks of profitable trades.

Consider all the reasons to enter a trade whenever an opportunity comes. Then think of all the reasons not to enter. When price, statistics, support, resistance, and exits converge to provide confluence, the probability of success shifts in a trader's favor.

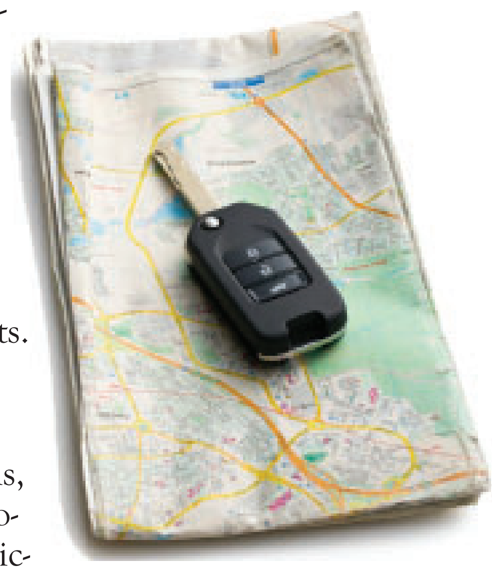
The Psychology of the Discipline

No one wants to hear this, but humans are not wired to trade. Everything about trading flies in the face of our evolution. Millions of years of development favored the survival of those who looked across the plains, saw a rock, thought it was a lion, and turned and ran the other way. The response to danger and risk is primal, and the discomfort most people feel when they start trading is firmly rooted in our nature.

Trading creates psychological discomfort on several levels. A person's relationship with money, risk, winning, and losing, not to mention the social pressure friends and family can exert, makes this one of the most challenging endeavors we can set out on. Everything about it as a career flies in the face of what we've spent a lifetime believing a job is. I've trained hundreds of people to trade for a living. Thousands of people have read my books and articles. And I know that the biggest obstacle to their success is the emotional Pandora's Box that a career as a trader can unlock.

Performance Psychology: A Road Map To Trading Success

As Ph.Ds in Psychology, we could go on all day about various aspects of this enormous subject and how it affects trading. My specialty is in Organizational Psychology, and I could apply that to the corporate side, understanding the financial business structures and how that affects the markets. Julie's specialty is in Social Psychology, and she could dive into Behavioral Finance, explaining how the markets move based on the participants' reactions. While these areas are very interesting, they are broad and do not help an individual trader's daily approach to the markets.



Instead, we will introduce you to the best practices from Performance Psychology. There is a science to excellence for athletes, elite musicians, dancers, and other high achievers. It is not a coincidence that athletes use principles and practices that are research-based and honed to bring successful outcomes and higher achievement. This is where we suggest you focus your efforts. As Performance Psychologist Eddie O'Connor sums up the commitment, "*Ultimately, to be their best, athletes and performing artists must accept what is, giving up the struggle for control, and must maintain a diligent focus on the task at hand. This commitment involves a willingness to feel what is necessary in service of performance achievement.*"

In other words, becoming a master trader will require you to:

1. See what is before you in the market and not what you want it to be.
2. Stop trying to control the aspects of the market that are out of your control.
3. Focus intensely on your trading as you are performing.
4. Accept the pain of losses to move past them and keep trading.

Core Values:
Relationship To Money

All performance is built on a "why," and I am highlighting one important area - your relationship with money. If you can find the core values that connect you to your "why trade" you may find meaningful areas that support continued motivation for trading excellence. Then you can create values-based goals and a roadmap to excellence. Recognizing deeper emotional ties to money can direct you to how you want money to function in your life.

Core values are principles or beliefs that a person considers of central importance. You can find many suggestions and worksheets to prioritize your own, and a sample list follows on the next page. Feel free to circle some that you consider personally meaningful, and you can always jot down others not listed. Money is just a tool, and the other values you identify can impact how you use, think about, and relate to money.

Acceptance	Achievement	Adventure	Altruism
Appreciation	Appreciation	Authenticity	Authority
Balance	Beauty	Belonging	Challenge
Collaboration	Commitment	Community	Compassion
Connection	Contribution	Creativity	Equality
Excitement	Expertise	Fairness	Faith
Family	Fast pace	Financial Rewards	Focus
Friendship	Fun	Happiness	Harmony
Helping others	Honesty	Humor	Imagination
Influence	Intellect	Intuition	Justice
Leadership	Learning	Love	Loyalty
Nurturing	Order	Passion	Peace
Power	Privacy	Productivity	Reach potential
Respect	Responsibility	Results	Risk taking
Routine	Security	Self-Expression	Service
Solitude	Spirituality	Status	Success
Teamwork	Tolerance	Tradition	Travel
Variety	Winning	Wisdom	Zest for life

For example, money can serve a purpose in helping you define your "why" for trading:

- creating a sense of security
- having peace of mind and reducing anxiety about money
- having more freedom in your decisions
- having more choices available to you
- experiencing enrichment & fulfillment in life
- gaining knowledge through an education
- giving your children more opportunities
- improving physical and mental health
- creating a comfortable lifestyle
- building relationships
- maintaining independence
- saving adequate funds for retirement
- being responsible
- being generous

I Know Exactly What I Did To Earn That Money...

Trading often differs from any other way you have earned money in the past and can often tap into the ways your parents related to money.

Most people go to work for one reason – they want to earn a living. They may enjoy their job or hate it. Their co-workers may be fantastic, or they may be frustrating. But at the end of the day, going to work usually means earning money. People have relationships with money that emanate from experiences they barely remember. I've talked to traders who remember how hard their mothers or fathers worked. "He came home every day and looked like he bore the world's weight on his shoulders. My parents worked so hard for so little money."

Memories like this are part of our histories and are hard to let go of. "Knowing the value of a buck" can make it difficult to risk a buck. And knowing that a day's work can just as easily result in losses as it can wages is a tough hurdle to overcome.

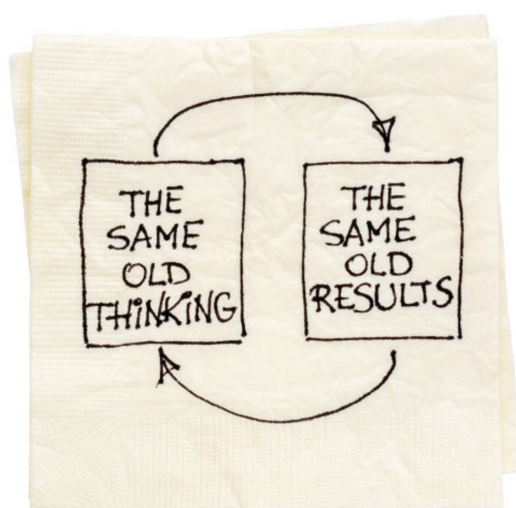
Every trader needs to come to an understanding of what money means to them. No one wants to come home with less than they went to work with, but in trading, it will sometimes happen. Understanding what money means to us and where the feelings it stirs up are coming from is critical in building a successful trading business. I've seen people try to make a go of this for years, and a loss will set them back on their heels. It prevents them from taking the next trade. It creates anxiety and stress. And only when they understand the demon can it be put in a cage and focus on analyzing and executing their trading plans.

So consider your core values and see if you can find your deeper motivation and your "why I trade." It helps to identify your "why" for trading because these core values will serve as a compass, giving you a foundational reason to succeed and persist in your trading goals.

Cognitive Habits Of Mind

Another pervasive aspect of trading affecting performance is unhelpful thinking. Training your mind to adopt positive habits in your thoughts and eliminate the negative ones is challenging but possible.

On page 65 are examples of common negative thoughts and distortions among traders, but by no means an exhaustive list. As you look through these examples, consider whether these distortions have affected your trading and to what degree. Then think or jot down ways to identify the unhelpful thought in real-time. Sometimes just being able to isolate that an idea you are having is unhelpful and unwarranted is enough to set you down another path.



Unhelpful Thinking Styles

All or nothing thinking

Sometimes called 'black and white thinking'

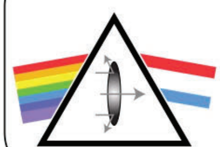
If I'm not perfect I have failed

Either I do it right or not at all

Over-generalising

Seeing a pattern based upon a single event, or being overly broad in the conclusions we draw

Mental filter



Only paying attention to certain types of evidence.

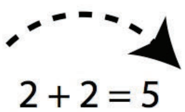
Noticing our failures but not seeing our successes

Disqualifying the positive

Discounting the good things that have happened or that you have done for some reason or another

That doesn't count

Jumping to conclusions



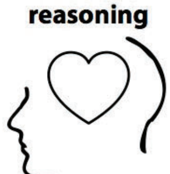
There are two key types of jumping to conclusions:

- **Mind reading** (imagining we know what others are thinking)
- **Fortune telling** (predicting the future)

Magnification (catastrophising) & minimisation

Blowing things out of proportion (catastrophising), or inappropriately shrinking something to make it seem less important

Emotional reasoning



Assuming that because we feel a certain way what we think must be true.

I feel embarrassed so I must be an idiot

should

must

Using critical words like 'should', 'must', or 'ought' can make us feel guilty, or like we have already failed

If we apply 'shoulds' to other people the result is often frustration

Labelling

Assigning labels to ourselves or other people

I'm a loser
I'm completely useless
They're such an idiot

Personalisation

"this is my fault"

Blaming yourself or taking responsibility for something that wasn't completely your fault. Conversely, blaming other people for something that was your fault.

Recognizing the unhelpful thought is the first step, the next is to challenge it.

- First, identify the thought ("that trade was a catastrophe").
- Next, write down evidence for the thought ("I let my stop run and lost more than I should have on that trade, and now I am in trouble").
- Next, write down a challenge to that thought ("I only lost double what I had intended to risk, I am not going bankrupt, I will be alright, and I can fix this next time").

The challenges can help a trader see how most thoughts are not absolute facts, and many fall into categories we habitually repeat.

Winning Isn't Everything – It's The Only Thing…

There are a couple of other specific negative thoughts related to trading I want to go over in a little more detail.

Like it or not, the generation most of us grew up in did not get any trophies for showing up. Winners got the prize, and losers got ridiculed. Everything was better when we won, and winning still feels great. Losing, on the other hand, evokes a very different emotion. It makes us feel bad. We internalize failure and diminish our self-worth when we lose, especially frequently. But trading is not a game for people who internalize losses. Traders need to overcome this predisposition, and we need to do it quickly. The alternative is a self-perpetuating cycle of major beatings fueled by an unwillingness to take a manageable loss.

I have shouted from the highest mountain about the necessity of taking stops. I've trained countless traders who looked me right in the eye and said, "I get it. Plan the trade, trade the plan. If the stop is hit, get out." Somewhere down the road, however, some of these enlightened folks inevitably tell me that they stopped using stops because they constantly get cleared out of positions only to watch the market move to their profit objective. Their arguments can be so persuasive that I wonder if I've missed something.

One trader assured me with spreadsheets in hand that the key to increasing the slope of the equity curve was to let the trades breathe. He showed me the data and insisted, "If they swing against me, they always come back." That worked for him. Until it didn't.

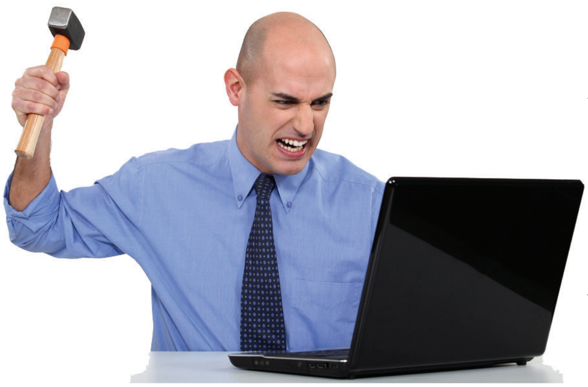
My friend learned a lesson. And the lesson involved blowing out an account. The psychological damage will last much longer than the financial loss. And while it could have been avoided, the truth is that the only way to change the wiring is to endure the pain. Some of us will break the rules and travel to the woodshed. After a few of these lessons, our psychology can adapt to the reality that the rules were not meant to be broken. They are there because trading is not about intuition. It is rooted in counterintuition. And the only way to work in that environment is to have rules and procedures to guide our actions.

Traders who focus on the win will almost always amplify the loss. I've seen the scenario play out a thousand times. The good feeling that accompanies winning makes them take smaller and smaller gains so wins can be booked more frequently. To avoid the bad feelings associated with losing, win-obsessed traders will walk away from the machine and let the price action blow right through the stop. It doesn't take long for the gravity of the situation to sink in and psychological damage to be inflicted. I know a trader who has been down this road enough times to blow out three accounts. He always claims to have learned a lesson, but when he checks in with me, the song remains the same – "I had five winning trades, all for a couple of hundred dollars. But this last one has me down three grand. I think it's all rigged..."

This is what you can expect when the only goal is winning. I encourage everyone to gauge their success by following their plan and process. That changes the metric in a hurry and substantially reduces psychological discomfort.

One Way Or Another, This Market Is Giving Me Back My Money...

Revenge traders are everywhere. They operate against a psychological backdrop known as cognitive dissonance. It amounts to a person's self-perception instead of what happens in a situation. The emotions that are involved are based on a lifetime of experience. "I have been successful at everything I've done, especially when I work hard at it. I know how to get the ball across the goal line. I'm going to push the envelope here and move the needle.



I am going to get these losses back and then some. I don't lose. I'm a winner."

Unfortunately, anger about a loss or string of losses does not generally inspire clear-headed decision-making. And judgment clouded by dissonance is generally poor at best. The reality is that the market is not an opponent. It doesn't care how much you want to make or are willing to lose. And it isn't concerned with how smart you think you are. The only way to exact revenge is to have the courage to take your loss, learn a lesson, and avoid repeating mistakes.

It's Not You, It's Me – Well, Maybe It Is You...

When people feel that the rudder of destiny is in their hands, they have an internal locus of control. The locus is external when someone feels that destiny is steering the ship. When the feelings get to be extreme, dysfunction sets in.

Traders who over-internalize tend to place credit or blame irrationally on themselves. Everything is a function of their skill or knowledge; their inadequacies are the source of their losses, and skill is responsible for all their gains.

Traders on the other end of the continuum put it all on the market. Failures occur because the markets are rigged to "favor the house." The insiders control the game; any success is "too easy" and probably luck. No success or failure comes from within; it's all a function of the "invisible hand."

The truth is that success and failure are dictated by a combination of the wind in our sails and a solid knowledge and feel for what to do with it. But the truth is hard to find, and our windows to the world reveal long stories. We've all operated on a backdrop of our heuristics since we were kids. If what we are used to seeing is a situation out of our control, then trading will be difficult. If we see a world, we think we can easily control; it will be equally challenging.

What've You Done For Me Lately?

A good friend of mine played professional baseball when we were young. He read *Around the Horn: A Trader's Guide To Consistently Scoring In The Markets* and loved the baseball analogy. He said, "You nailed it with the idea that every trip to the plate has to be a blank slate." Batters who perseverate on their last at-bat as a home run or strikeout have a tough time using a fresh set of eyes to see the next pitch. In psychology, this is called the recency effect, and it can really affect a batting average. The batter who focuses on the fact that he knocked the ball out of the park when he was last at the plate can easily find himself overconfident and sloppy. His counterpart focusing on a recent strikeout, will walk to the batter's box shaken and afraid. Neither is a good place to be. The best athletes are aware and confident of their abilities. They approach the plate with a realistic understanding of how to get to their best performance.

The same holds in trading. I have seen the recency effect in the people we work with. Most of the traders we have seen struggle have a focus on what happened in their last few trades, and it either makes them overconfident and reckless or passive psychological bystanders who predict their subsequent failure before even taking a position in the market. Focusing on your strengths, skills, and knowledge is impossible when you constantly tell yourself you have none. Similarly, you cannot focus on the reality of the potential a trade offers if all you can think about is that last week when you had no stops in place, you entered by gut feel and generated a 50% return. Underconfident or overconfident both will do their damage.

If the recency bias is part of a trader's personality, it is rarely something they developed since they started trading. I've had many people explain to me how things don't seem to work out for them, that they are a jack-of-all-trades, master-of-none, and that they expect trading is, at best, a 50/50 proposition for them. When we start talking things through, they point to a recent failure or string of failures and explain that this is all the evidence needed to prove the case. I love to follow up with, "Well – you must have done something right. You have the money to fund a trading account and had a successful career." The response is usually akin to "Right place, right time."

It's all very frustrating, but it is a reality. The recency effect can be psychologically devastating. And if it's part of how you're wired, you will need to do some work to eliminate it from your personality, or trading will be exceedingly difficult.

Recognizing your thought patterns and seeing how they are a part of your habits of thought is the first step to changing them. Challenging them as true or untrue is the next step in shifting your mindset. Next, we'll look at developing positive thinking habits.

Developing Positive Thinking Habits To Achieve Positive Results

We have to actively choose better thought patterns if we are going to achieve enhanced trading performance. We work under challenging conditions that demand strategic reasoning, insight, perseverance, accuracy, and flexible thinking to resolve those complexities. The following are a sample of positive "Habits of Mind" that should become the greater part of your cognitions, replacing the negative thoughts that are unhelpful and untrue. The good news from neuropsychology is that the more you think constructively, the neurons in your brain physically reorganize to make those thoughts the defaults, and the neurons tied to the unhelpful thoughts whither away. It matters what you think and dramatically affects your ability to trade effectively.

What's In A Personality Anyway?

Personality researchers disagree about perfect measures and how stable a personality trait is over time. But some of the more researched frameworks may be helpful to traders in determining where they stand at any particular time. One of these is the *Big Five Personality Traits*. The two most relevant for trading (Conscientiousness and Neuroticism), combined with a custom Risk assessment, are helpful as a jumping-off point for discussing a person's approach to trading.

Risk: A Fool And His Money Were Lucky to Get Together in the First Place.

People often confuse risk tolerance and gambling, and I haven't met many good traders who are gamblers. Poker players are an exception because their game is about folding as often as they play a hand. I have a good friend, a successful professional poker player who assures me that his favorite scenario involves sitting across the table from someone eager to play. "They overplay every hand, and they blow out pretty quickly."

If you are doing it right, trading is a tedious business. People who like action often fall into the gambler's trap. The market runs without them, and they jump into the middle of a runaway move. When the inevitable reversal hits the tape, they stop at the bottom of the trend, which is, unfortunately, where they should have got in when it started. Impatience and the desire for action will pull a gambler into the market in the wrong places and times.

Over the years, clients who were fond of the action have tried to pick tops and bottoms because they are making a bet that "if it's down this far, it has to go up." I ask why it has to do anything and get a blank stare instead of a response. This is a big problem since it reveals what most people already know. Gamblers are wired to lose. They know that the odds favor the house, but they convince themselves of the chance of a quick score. They go to Las Vegas, remembering the times they won and marginalizing the magnitude of any losses they have suffered. I have encountered many of these folks over the years, and everyone has insisted they are ahead overall. They've beat the house over time, even if they lost thousands of dollars right before me. I either know a lot of very talented gamblers, or someone's lenses have clouded reality.

When they get involved with trading, it's equivalent to having Las Vegas in their living room. Big money is on the line, and lots of players are in the game. And the urge to make a bet is overwhelming. At my *Income Trading Boot Camp*, I often ask them why they made a trade and get responses like "It looked like it was going up" or "I figured this is, at worst, a 50/50 probability." The story never has a happy ending.

The good news for gamblers is that many psychological strategies help to overcome the urge. By working hard to understand what drives the impulse, most people can learn to leave gambling to the casino and focus on trading as a business.

Neuroticism:

Neuroticism is typically defined as a tendency toward anxiety, depression, self-doubt, approaching the future with dread, reflecting on personal weaknesses, and generally finding it difficult to enjoy life to its fullest. All traits are measured as a continuum, with those measuring high in this area tending to trade more fearfully and hesitantly and those low on this trait freer to employ their trading plan more confidently.

The Fastest Road To Failure Is Paved With The Fear Of Failure.

I've known many people who start trading and are afraid their heads will be handed to them from day one. It's a lousy way to start any business, but it's awful when dealing with the markets. This fear is usually the product of uncertainty about what is knowable. I've had students who seem on the right track, rationally discuss their decision-making, and do well for days on end. Then they have a terrible day. Or two bad days. Or three. And they are convinced that they do not know what they are doing. The negative self-talk starts, and we spend days trying to undo the damage that the fear of not being good at this has done.

Again, this is part of a wiring problem. Trading is more like music than it is math. There are no definite answers. And knowing where all the notes are will never make you a great musician. Just like music, a lot of being a great trader is derived from feeling. Put in enough time, and it can be developed. I have known traders who start earning while sitting at the *Income Trading Boot Camp* for the first time. I also know great traders who returned for five years' worth of refreshers before making a go of it. What I've seen in every case is that these are brilliant people. They can all learn how to read the music. But they internalize the situation as not knowing what they are doing until they find their rhythm with the market and develop an intuitive feel for what they are watching. And feeling that we do not know something makes us fearful.

Unfortunately, fearful traders lose money. Sometimes more than their over-confident counterparts. Fear will lead a trader to exit a good trade at the first adverse tick. "The profit target is a dollar away, but I booked 12 cents because I thought it would go against me just like the last one." They internalize a loss and interpret it as a deficiency. "I'll never understand how to do this." And they see what they did wrong in every action rather than what they did right. "I got out at my target, and now look at it. Another two dollars, and I left it on the table."

If any of that sounds familiar, know you are in good company. Many successful people feel they must always work harder to accomplish their goals than everyone else. They convince themselves that "everything is easy for everyone except me." And when it comes to a business with variable income like this one, they allow themselves to feel stupid and let that feeling dictate what to do next.

Here is a typical scenario:

1. I have a series of bad trades.
2. I decided to lower my share size.
3. I have a series of good trades – "I'm an idiot – why did I cut the size?"
4. I raised my share size and lost again.
5. I decided to paper trade until I could figure this out.
6. I see my mistakes and am ready to go live again.
7. I return to #1 and repeat this cycle for years.

This happens. A lot. Fear of losing drives the sequence, and a misinterpretation of what is happening along the way perpetuates it. Many traders think reducing share size will help them sharpen their skills. But they don't consider that risk and fear are significantly reduced when they move to reduced position sizing. They profit because they trade better in this unemotional environment. Everyone does. But as soon as they raise their shares again, another slap to the face. Then comes the next move to the world of fictional trading.

I have never met an unprofitable paper trader, and I doubt I ever will. Nothing is on the line, and emotional well-being is as simple as a trade do-over. No situation feeds fear less than the simulator, and the best part is that we can feel pretty smart, even invincible, when the fear factor is gone. But ultimately, the only way to overcome the psychology of fear is to confront the demon head-on. Find the cause of the emotion, acknowledge it, then work to keep it in its cage.

Traders may see themselves in the following mind traps: Failing to pull the trigger on a good setup, letting losing trades run, cutting winning trades short, adding to a losing position using hope, morning profits, and afternoon losses, taking unplanned trades, holding trades for "home run" and reducing position size after a loss.

Conscientiousness:

Conscientiousness refers to a person who acts with thought, discipline, and control. A person with high conscientiousness tends to be goal-oriented, have high impulse control, show attention to detail, be organized, have a strong work ethic, and be emotionally stable. It is manifested in characteristic behaviors such as being neat and systematic, including carefulness, thoroughness, and deliberation (the tendency to think carefully before acting). Someone with a lower conscientiousness score may be less structured and focused and more impulsive and distracted.

Our traders with the most success are very conscientious with their trading plans. Many already had a high aggregate of these traits in their personality profile, approaching my training and strategies logically, calmly, and confidently. Others seemed moderate in this area, but with commitment and practice, they increased their commitment, organization, and planning, then took time setting up and executing their trades. I have several trading plans, each requiring a different degree of focused attention to process real-time information systematically. The trading plans that specify the entry, exit, and target the day before require the least conscientiousness but still benefit from proper trade management and setup. Other trades that are live on the day of, such as the 2 Standard Deviation Opening Gap Trade, require a high degree of organized thinking and discipline on the fly. Matching traders up to the proper trading plan is sometimes a matter of assessing their current state of conscientiousness.

Let's Take Inventory . . .

Each measure on the inventory assesses a single dimension of personality. And each of these dimensions is uniquely related to the "fit" of a person's psychology to equities trading. Contrary to what most would assume, there are no elimination scores, but there is a "best fit" for people who wish to blend their personality and the market.

Log in to Traderinsight.com with your username and password. Then navigate to your dashboard and click on Trader Type Inventory. Complete the test and read the feedback. Perhaps you'll learn something about yourself.

What's The Score?

The first measure calculated by the inventory you just completed is one of the Big Five" personality traits: **conscientiousness**. This fundamental personality trait assesses your responsibility, organization, and diligence and sets your willingness to play by the rules and maintain self-control. This dimension is a significant predictor of how well you will stick to your discipline, plan your trade, and trade your plan. Most successful traders score high on conscientiousness, and if your score is on the low end of the scale, you need to do some work and get to a higher level.

The optimal conscientiousness score for aspiring traders is at the top of the range.

Risk tolerance is the next dimension on the scale. It's not a "Big Five," but it interacts with their ability to function. Risk tolerance is a tricky construct. Too high, and you may be on the trader's death row. People who are "off the scale" on this dimension are gamblers. People at the lowest end of the scale will stop every trade because of their risk avoidance. Risk tolerance plays into the hand of every demon we carry through life. So it is essential to consider why scores are at the extremes of the range. Every trader must aspire to move this score into the moderate end of the scale.

Finally, the scale assesses **neuroticism**. This dimension is the most difficult to accept and the most challenging to alter. This personality dimension will have you playing the blame game when things go wrong and the self-doubt game when they go in your favor.

Conquer the Sea Today, The Ocean Tomorrow.

Most people want to dive into trading headfirst. It seems a simple process. Learn from the best, then go live as soon as possible. The psychological demons must be conquered before trading goes live, or the ship will likely sink. It's not going to take years of therapy. It is going to take an understanding of self. A trader needs to be at peace with his relationship with money, risk winning, losing, and locus of control.

Brain & Body: Nutrition, Exercise & Sleep

It may seem obvious, but good physical health is essential for concentration, attention, and performance. Everybody has their idea about these very basic but somehow very hot-button functions. The point is to get enough of each in a quality way. Because these are fundamental, whole industries surround each, vying for your dollars. Achieving a good amount of each can be accomplished without expensive pills, supplements, classes, equipment, or gurus. Or you can include some combination of those things that are helpful to you. However you do it, research is unanimous that increasing the quality of these inputs is essential to overall performance.

Interestingly enough, these three critical inputs for your brain and body health all work together to strengthen one another. Better sleep leads to better brain function and better choices for nutrition and exercise. Exercise leads to better sleep and nutrition choices, and quality nutrition leads to better sleep and exercise choices. In whatever way works for you, consider how you can increase the quality and amount of sleep and exercise while achieving the nutrition necessary for proper brain function.

It may seem obvious, but you should only trade when physically and mentally healthy. Not with a cold, flu, or exhaustion from a late-night flight. Not when you are in pain from an injury. Not right after a death or other mental or emotional blow. Trading requires your attention, both in planning and executing, understanding that you need to show up to trade but that it's not only about showing up. This is a "work smarter," not "work harder" endeavor, and "just being there" is not enough.

Mindfulness

Because we must be aware, intentional, and purposeful in everything we do in trading, we want to be mindful. Though it is an ancient practice, or perhaps BECAUSE it is, research continually shows its benefits. In sports psychology, it is a hot topic in both research and application because of the positive results it is getting. More than a technique, mindfulness builds mental strength, changing the brain and how it operates to enhance performance.

In contrast to skills training, mindfulness and acceptance-based models of performance enhancement look to change our relationship with internal experiences rather than change the frequency, intensity, or form of the experience itself. Performance expert Eddie O'Connor, Ph.D. explains, "*The core belief of a mindful approach is that a person performs best when staying with a nonjudgmental, moment-to-moment awareness and acceptance of one's internal state, with his or her attention focused on what is essential for performance and a consistent, intentional behavioral effort of actions that support what he or she values most.*"

A vast amount of research shows that mindfulness meditation changes basic brain structures and functions, such as the study results that after only eight weeks of training, researchers found an increase in gray matter in the left hippocampus, the area critically involved in learning, memory, and regulating emotion. O'Connor continues, "*The data suggest that the mechanisms of action* *in mindfulness are improved mental efficiency through the development of greater awareness and acceptance of internal experiences, thus freeing the athlete to focus more attentional resources on his or her performance and get better results... the changes in the brain allow athletes to automatically notice and direct their attention to what is most essential, without needing to consciously reduce or control reactions to other potentially distracting experiences to do so*."

In other words, a mindfulness practice physically changes the brain to reorganize your neurons for more extraordinary performance with the benefit of allowing the internal dialog to chatter on. It allows you to put that chatter aside and get on to the vital task of focusing on the trading in front of you. This is huge for traders. As we have discussed, the internal dialog is not usually supportive and is full of unhelpful thoughts and ideas. By allowing this to go on but not focusing on it (trying not to focus on something only makes you think about it more, try not thinking about ice cream right now, and I bet you'll have it for dessert!). Mindfulness allows you to let your brain be busy, but over on the side, so that you can immerse yourself in the trading.

Mindfulness can be practiced with various methods. One of the easiest ways to start is with guided meditation. Julie likes the Monterey Bay Aquarium's "Meditoceans" - short guided meditations while watching jellyfish or open ocean scenes. From there, you can branch out with a Five Senses walk outside (with bonus exercise and nature involved) by using each sense to see what you hear, smell, feel, etc. Some folks listen to music and "lose themselves," or others dive into a hobby, while others use prayer. As long as you let your thoughts go as you "lose yourself" in the other activity. One instructor once told us, "Don't try to suppress thoughts; simply notice them and let them go, like sitting on a train and watching villages pass by."

Focused Attention

Sports psychologist Eddie O'Connor states, "*There might not be a more important psychological skill for performers than focused attention .. . . problems arise when performers' attention shifts–usually from what they are doing to what they think or feel. If your attention isn't on what you are doing, then none of the other skills matter. Focus can be developed, and it is to our greatest advantage to develop it.*"

Like athletes, traders need to focus on:

- the correct, specific target
- the actions under their control

Distractions will happen, and one way to build mental strength is mindfulness training to build a nonjudgemental way to let go of distractions and turn to the chosen target. Another way to build focus is simulation training, practicing under conditions that simulate reality. Yet another is performance routines before trading, using specific focus components to guide attention to get into the moment.

Focusing Exercises

Focusing exercises help traders limit their attention to what is most important.

What's My Job?

Before going into a game, athletes should identify two or three behaviors under their control to emphasize. When an athlete knows his or her job – two or three specific behaviors to focus on and return to – it helps ground him or her in the chaos. He or she can then play with purpose and determination.

What's Important Now? (WIN)

Do you want to WIN? That stands for "What's important now?" With this technique, whenever you are confused or overwhelmed, stuck on a mistake, or nervous about the future, ask yourself, "What's important now?" It brings you back to the present moment and some action thoughts that will best help your performance. At any given moment of any performance, there will be some specific thing that is most important for you to be doing or focusing on.

Performance Routines can also help traders become like elite athletes. Below are two different Sports Psychologists ideas on how to have routines around behaviors to make corrections more fluid.

Performance Routines:
Dan Kirschenbaum's 4-F's

Fudge	Fudge, a brief, internal negative reaction;
Fix	Fix, correcting by executing the correct play, or corrective imagery;
Forget about	Forget about it;
Focus on	Focus on what's important now.

Performance Routines:
Jim Taylor's 4-R technique between sessions

Rest	Take a few slow, deep breaths once the performance is over to relax, recover, and center.
Regroup	Check in with your emotions and work through any frustration, anxiety, and/or calm down if overly excited after a big play.
Refocus	On the task in this moment. Get out of the past mistake or thoughts about the future. Target what you need to next. This may be technical, tactical, or mental.
Recharge	Bring your intensity up or down, depending on your sport demands and current level of energy

Performance Ready Check-List

PHYSICAL: BRAIN & BODY & ENVIRONMENT

Practice Solid Health Habits:
- [ ] Sleep and naps
- [ ] Nutrition for brain & body
- [ ] Exercise to increase brain acuity

Monitor Current Physical State:
- [ ] Rested
- [ ] Relaxed but Ready
- [ ] Not physically ill/sick
- [ ] Not multi-tasking other obligations

Prepare a Winning Trading Environment:
- [ ] Quiet and without distractions
- [ ] Comfortable/comforting
- [ ] Private enough for focus

MENTALLY & EMOTIONALLY PREPARED

Increase Conscientiousness:
- [ ] Have organized plan for trade day
- [ ] Use a trade check-list (mentally or actually)
- [ ] On-time for the trade/s
- [ ] Journal trade details for later review
- [ ] Practice to improve

Lower Neuroticism:
- [ ] Challenge unhelpful thoughts & core beliefs
- [ ] Journal emotions about trading to track
- [ ] Deep breaths and grounding for focus
- [ ] Plan to use software automation when possible

Cultivate Healthy Thoughts:
- [ ] Give yourself a break (self-compassion)
- [ ] Mindfulness activities to break negative cycle
- [ ] Focused Attention/Disengage Autopilot
- [ ] Plan for Breaks

Trade Check-List

STRATEGY

Overall:
- ❑ Software & Charts setup
- ❑ Clear on current direction
- ❑ Overlapping confirmations

Specific Trade Confirmations:
- ❑ Risk/Reward ratio favorable
- ❑ 2 or more confirmations identified
- ❑ Best entry level identified

Specific Trade Parameters:
- ❑ Clear on trigger criteria
- ❑ Clear on entry criteria
- ❑ Clear on exit for profit
- ❑ Clear on exit for loss

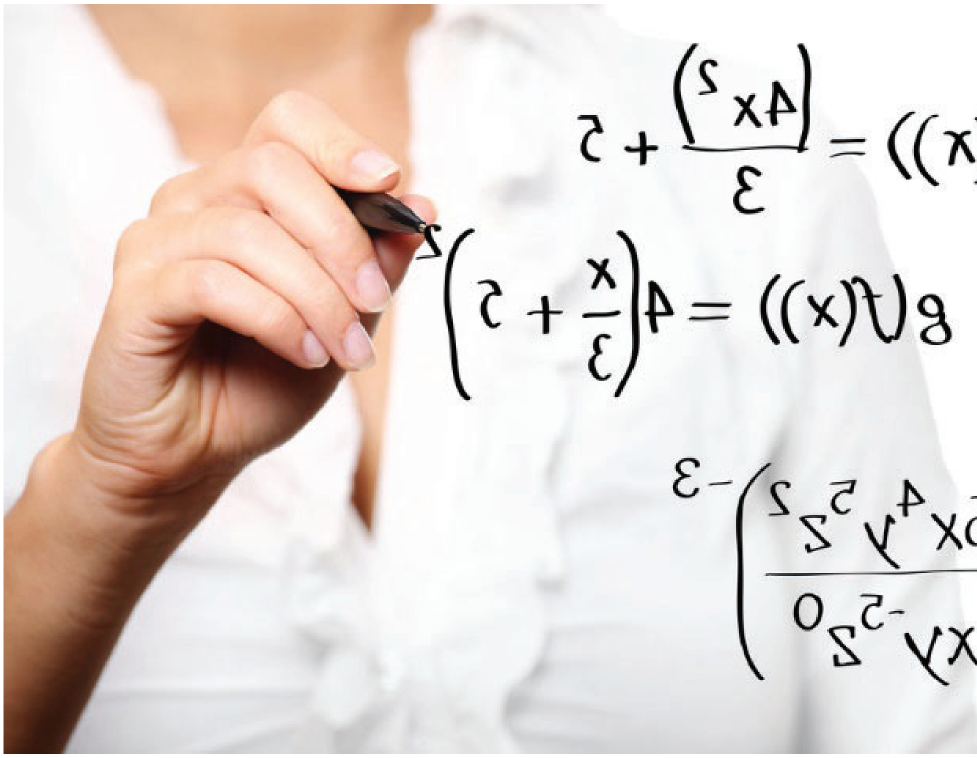
TRADE SET-UP

Price Action:
- ❑ VWAP
- ❑ Anchored VWAP
- ❑ Volume x Price

Statistical Support:
- ❑ Fibonacci
- ❑ 2 SD Envelope
- ❑ Stochastic

Support/Resistance Levels:
- ❑ Pivots
- ❑ 5 Min S/R levels
- ❑ Daily S/R levels
- ❑ Weekly S/R levels

Trading By The Numbers:



A decade ago, I worked with an algorithmic trading house on Wall Street. I was amazed by the number of new trading ideas they generated over the course of a few hours. They mapped their ideas on their office windows with a dry-erase marker and when something started to look like it made sense, the numbers would be run through backtesting, out-of-sample testing, and forward testing. One idea after another amounted to nothing, but no one seemed frustrated. These people were conducting primary research, and their job was to eliminate a lot of good ideas in search of one great one.

I have worked with many system traders over the years. They love tinkering with market data, and I must admit that I also love the pastime. You are putting objectivity on your side when you look for new trading ideas by crunching the numbers. If you do not curve fit your data, the story it will tell you is a pure representation of what is happening. Let's look at an example using the floor trader pivots we've plotted throughout the course.

Developing Trading Ideas Into Profitable Strategies

We know from years of data that the R2 and S2 pivots usually represent an extreme in the market for a security. But how significant is the move to or beyond one of these thresholds? More specifically, what is the likely outcome of an opening gap in the QQQ that places the ETFs trading price beyond one of the second-level pivots? I used RealTick to pull all the market data for QQQ since its inception and analyzed the numbers in Excel. The process and results were very interesting.

The data in Table 1 are not a random sample. They are the entire population of data points for the QQQ, revealing a fascinating pattern. The math here was elementary. The spreadsheet assessed whether a day's open represented a gap move higher than R2 or lower than S2. If the result was true, a 1 was returned as the value in the gap cell. If the result was false, then the value remained 0. If the gap value was 1, the spreadsheet looked at the day's low. If the low of a gap-up day was between R2 and R1, then a 1 was returned for the cell value, indicating that QQQ had moved lower and was in the range between R2 and R1. The next calculation considered whether, on this same day, QQQ moved into the range between R1 and the Central pivot. Again, a value of 1 indicated that the move happened, while 0 indicated no move.

The inverse of all this was the consideration on a day that gapped lower. The spreadsheet looked at whether a gap beyond S2 resulted in a significant number of reversions into the range between S2 and S1. It then checked for a continuation of that move to the range between S1 and the central pivot. This was my way of following up on a hunch and investigating whether there may be an opportunity in these gap openings.

R2 S2 Opening Gap Analysis

QQQ	INVESCO QQQ TR UNIT SER 1									Gap?	Gap?	High R2	Low S2	High R1	Low S1
Date	Open	High	Low	Close	S2	S1	CP	R1	R2	Higher	Lower	Reversion	Reversion	Reversion	Reversion
5/8/2015	108.46	108.92	108.3	108.69	106.15	106.75	107.20	107.80	108.25	1	0	0	0	0	1
5/11/2015	108.76	108.98	108.19	108.27	108.02	108.35	108.64	108.97	109.26	0	0	0	0	0	0
5/12/2015	107.63	108.33	106.8	107.78	107.69	107.98	108.48	108.77	109.27	0	1	0	1	0	1
5/13/2015	108.25	108.81	107.84	108	106.11	106.94	107.64	108.47	109.17	0	0	0	0	0	0
5/14/2015	108.88	109.67	108.48	109.58	107.25	107.62	108.22	108.59	109.19	0	0	0	0	0	0
5/15/2015	109.86	110.01	109.31	109.58	108.05	108.82	109.24	110.01	110.43	0	0	0	0	0	0
5/18/2015	109.4	110.28	109.32	110.06	108.93	109.26	109.63	109.96	110.33	0	0	0	0	0	0
5/19/2015	110.18	110.35	109.76	109.94	108.93	109.49	109.89	110.45	110.85	0	0	0	0	0	0
5/20/2015	110.02	110.67	109.43	110.01	109.43	109.68	110.02	110.27	110.61	0	0	0	0	0	0
5/21/2015	109.82	110.73	109.66	110.58	108.80	109.40	110.04	110.64	111.28	0	0	0	0	0	0
5/22/2015	110.45	110.87	110.38	110.47	109.25	109.92	110.32	110.99	111.39	0	0	0	0	0	0
5/26/2015	110.23	110.38	108.76	109.2	110.08	110.28	110.57	110.77	111.06	0	0	0	0	0	0
5/27/2015	109.53	111.08	109.29	110.96	107.83	108.51	109.45	110.13	111.07	0	0	0	0	0	0
5/28/2015	110.75	111.01	110.37	110.71	108.65	109.81	110.44	111.60	112.23	0	0	0	0	0	0
5/29/2015	110.64	110.79	109.79	110.05	110.06	110.38	110.70	111.02	111.34	0	0	0	0	0	0
6/1/2015	110.64	110.72	109.52	110.42	109.21	109.63	110.21	110.63	111.21	0	0	0	0	0	0
6/2/2015	110.01	110.61	109.47	110.07	109.02	109.72	110.22	110.92	111.42	0	0	0	0	0	0
6/3/2015	110.57	110.81	110.13	110.4	108.91	109.49	110.05	110.63	111.19	0	0	0	0	0	0
6/4/2015	109.78	110.48	109.21	109.56	109.77	110.08	110.45	110.76	111.13	0	0	0	0	0	0
6/5/2015	109.43	109.69	108.63	109.3	108.48	109.02	109.75	110.29	111.02	0	0	0	0	0	0
6/8/2015	109.25	109.33	107.97	108.19	108.15	108.72	109.21	109.78	110.27	0	0	0	0	0	0
6/9/2015	107.93	108.4	107.2	108.01	107.14	107.66	108.50	109.02	109.86	0	0	0	0	0	0
6/10/2015	108.38	109.81	108.26	109.49	106.67	107.34	107.87	108.54	109.07	0	0	0	0	0	0
6/11/2015	109.86	110.15	109.46	109.65	107.64	108.56	109.19	110.11	110.74	0	0	0	0	0	0
6/12/2015	109.07	109.3	108.6	108.75	109.06	109.36	109.75	110.05	110.44	0	0	0	0	0	0
6/15/2015	107.94	108.38	107.31	108.21	108.18	108.47	108.88	109.17	109.58	0	1	0	1	0	0
6/16/2015	108.1	108.98	108.05	108.8	106.90	107.55	107.97	108.62	109.04	0	0	0	0	0	0
6/17/2015	108.98	109.45	108.43	109.1	107.68	108.24	108.61	109.17	109.54	0	0	0	0	0	0
6/18/2015	109.5	110.88	109.44	110.69	107.97	108.54	108.99	109.56	110.01	0	0	0	0	0	0
6/19/2015	110.49	110.58	109.81	109.89	108.90	109.79	110.34	111.23	111.78	0	0	0	0	0	0
6/22/2015	110.7	111.03	110.45	110.7	109.32	109.61	110.09	110.38	110.86	0	0	0	0	0	0
6/23/2015	110.82	110.89	110.33	110.79	110.15	110.42	110.73	111.00	111.31	0	0	0	0	0	0
6/24/2015	110.66	111.13	110.19	110.22	110.11	110.45	110.67	111.01	111.23	0	0	0	0	0	0
6/25/2015	110.65	110.76	109.82	110	109.57	109.90	110.51	110.84	111.45	0	0	0	0	0	0
6/26/2015	109.98	110.23	108.86	109.27	109.25	109.63	110.19	110.57	111.13	0	0	0	0	0	0
6/29/2015	108.06	108.66	106.64	106.69	108.08	108.68	109.45	110.05	110.82	0	1	0	1	0	0

Table Value Statistics

When the spreadsheet analysis of the QQQ data is performed from 2015 thru April 2023, the results in Table 2 are generated.

	Number of Gap Higher		Number of Gap Lower	
	90		86	
Reversion 2	***63***	70%	***66***	77%
Reversion 1	***38***	42%	***39***	45%

Table 2 – QQQ gaps beyond R2 and S2, 2015 thru April 2023

The results reveal a strong relationship between a gap extension beyond R2 or S2 and a potentially profitable trade back into the range between R2 and R1, or S2 and S1.

Gap Higher Results

In 90 Cases over eight years, QQQ gapped higher beyond the second resistance at R2. There were 2,000 trading days during the lookback period, meaning that this magnitude gap higher occurred on 4.5% of trading days. On 63 occasions, the gap eventually turned lower and traded back into the range between R2 and R1. Therefore, a trader who shorts a pattern entry above the R2 pivot line has a 70% probability of being squarely in front of a profitable opportunity. Most successful traders would literally "bet the farm" on a probability this high.

When we look at the data and consider the likelihood of a further reversion to the area between the first resistance (R1) and the central pivot (P), the probabilities are against a profitable outcome. The extension only occurred in 38 of the 90 observations, meaning that 42% of the time, a profit extension happened. So, traders who did not take targets before R1 diminished the value of their trades.

Gap Lower Results

During the lookback period, QQQ gapped beyond the second resistance (S2) 86 times or 4.3% of the total observations. In 66 instances, QQQ moved back into the range between S2 and S1. This implies that when QQQ gaps lower beyond S2, a trader who finds a long-side pattern entry opportunity has a 77% probability of a profitable trading outcome.

In 39 observations, QQQ continued the move from S2 to S1, trending toward the central pivot (P). Once again, the second to first pivot move had a much lower probability of success, with only 45% terminating between S1 and P.

Working with the numbers

The data suggested that whenever a gap beyond S2 or R2 occurs, the best course of action is to look for a pattern indicative of a reversal. I prefer to use some of the pattern setups from *Around the Horn: A Trader's Guide to Consistently Scoring in the Markets* to provide an edge when picking reversal entries.

For those familiar with the book or the *Income Trading Academy* coursework, my opening gap strategy capitalizes on a 1-2-3 (or 1-2-3-4, etc.) pullback to indicate a potential entry that fades a 2SD morning volatility gap. When such a move occurs after a gap past R2 or S2, it indicates the same entry opportunity. Figure 26 illustrates the 1-2-3 setup that occurred on February 27, 2023.

Figure 26 – A gap beyond R2 reverts into the R2, R1 range.

QQQ gapped higher on February 27 and stayed above R2 for most of the first hour. When a 1-2-3-4 move higher formed an exhaustion pattern, the violation of he highest low in the pattern move signaled an entry opportunity on the short side of the market. Although this can be uncomfortable psychologically due to the strength of the market, the knowledge of a 70% likelihood of a move below R2 and an extension into the R2-R1 range can make the decision to participate in the move very easy. The trade provides at least $1.40 per share traded in profits depending on the exit criteria used.

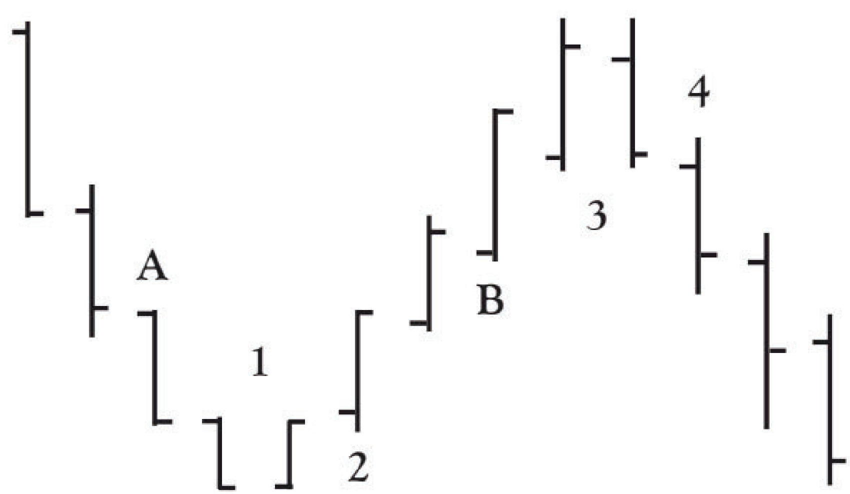
Any of the reversal patterns I use are suitable for these setups. Double Header, Infield Fly, 3-2 Pitch, and Checked Swing are good entry candidates. In the case of Infield Fly, I will use it on both the long and short side of the market. I have included the rules for each setup here for those who have not referenced the book in a while.

Double Header

Charts are made up of large numbers of short waves that together form a longer-term trend. At the peak or valley of each of the short-term moves, we often times find the Double Header pattern signaling that a low or high has been put in. When this happens, a low risk entry is presented, offering the alert trader the opportunity for intraday and multi-day profits. The pattern is easy to spot, and generally pretty simple to trade.

The long and short trade setups are shown in the chart below.

1. Price moves to a low. Trading in the following session creates a near mirror image of the first day's move. Both bars should open and close near the extremes of their range. When both bars are in place, the first criterion of the setup is met.
2. The long entry is .10 - .15 above the high of the reversal bar. The profit target is A, the high of the bar on the day immediately preceding the setup.
3. Price trends to an interim high. We wait until the reversal bar is in place, and the two bars together create the Double Header confirmation.
4. The entry is .10 - .15 below the low of the reversal bar. The profit target is B, the low of the bar on the day immediately preceding the setup.

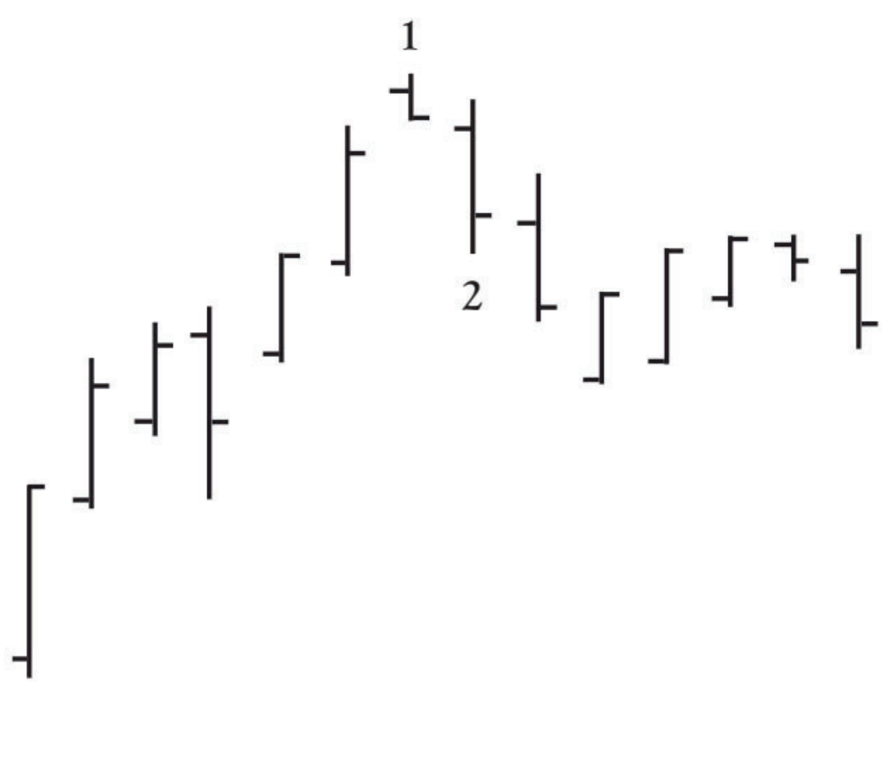


Infield Fly

The Infield Fly relies on the fear factor to generate profits. Basically, we are looking for stocks to move sharply to the upside and to be pushed too far in too short a time frame. This setup relies on a gap day to take price higher, and fail to put in a strong close. The next session, we look for a short selling opportunity, and a move to profits.

The entry criteria for the short sale are as follows:

1. A move up on a daily chart culminates with a gap higher which closes in the lower half of its range. Ideally, there is room for profit between the low of the gap day and the high of the previous day, but the pattern works very well even if there is not.
2. The stock must break the low of the gap day by at least .10 to trigger an entry. If the position closes strongly in our favor, we will carry a 30 - 50% portion overnight.

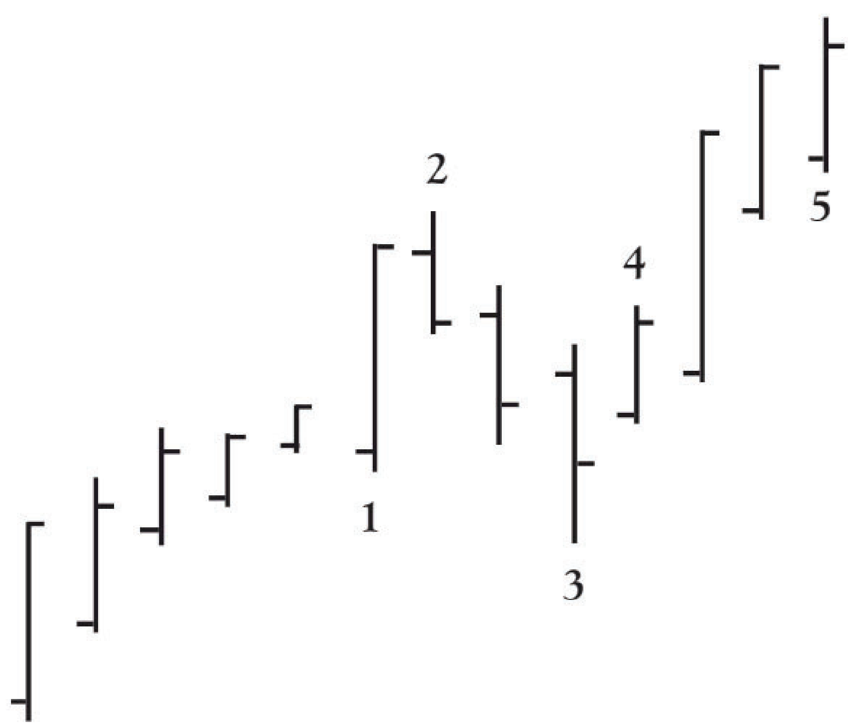


3-2 Pitch

Often, traders drive price higher on good volume and with an expanded trading range. These are the ingredients that create the Fast Ball setup. Unfortunately for breakout traders, profits must often be taken quickly on these moves as they are much more prone to failure than they were in the bull market of the 1990's. The 3-2 Pitch pattern uses a Fast Ball failure and a subsequent pullback as the primary ingredients for a long setup that can lead to substantial profits.

Here are the rules for buys (short sales are reversed):

1. A Fast Ball break.
2. The trigger either does not happen, or results in a loss.
3. The stock has a 1 - 5 day pullback.
4. We enter on an intraday breakout of the high of the deepest pullback bar.
5. A portion of any profitable position is carried over as a swing trade.

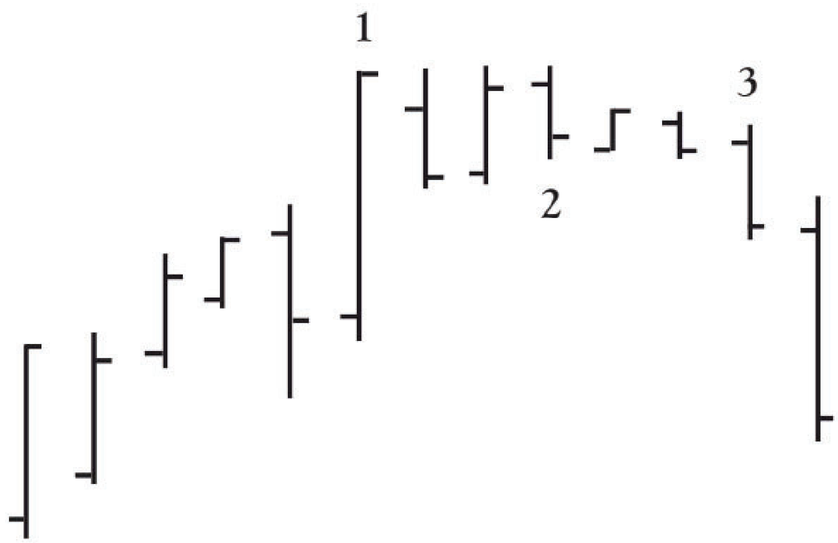


Checked Swing

Pattern failures are a dissappointing fact of a trader's life. In the case of a failed Fast Ball setup, however, they can be the seeds of opportunity. The Checked Swing relies on the propensity of wide range days to be followed by additional volatility, even if the result is not follow-through. Basically, the trade is a means of anticipating the fear of traders who caught the tail end of the prior day's move and now feel that it is time to quickly head for the exit.

The criteria for longs and shorts are as follows:

1. The stock opens and trades in the direction of the previous day's range expansion high or low.
2. The Fast Ball pattern fails to break out, or breaks out and reverses. The stock then trades in a short consolidation shy of the previous day's range extreme.
3. Entry is a few ticks outside the consolidation range.



Get Down to Business!

This manual section is intended to get you thinking about the possibilities. The R2 or S2 gap is just one of the infinite possibilities for profit. You should start thinking outside the box and testing trading ideas. Do they represent potentially profitable trading strategies? What if the opening bar range is violated to the upside and is higher than the highest bar in the previous closing range? Is there a potential edge in bracketing the first 15 or 30 minutes of trading activity and entering on a violation of the high? The low? What happens when R2 or S2 are violated during the first 30 minutes of trading without a gap – do the reversion moves still happen?

There are many possibilities when considering what is or can happen on the charts. Open your mind's eye and start writing down ideas. Then flip through charts and glance at them. If you think you are on to something, start testing your theories in a spreadsheet or with TradeStation, MetaStock, Finviz, or any other platform that allows you to test and make sense of data. Look at the results, tweak the criteria, and search for improvement. Avoid the urge to curve fit and overoptimize – and always test in-sample, out-of-sample, and walk-forward data. And most of all, have fun with the process.