Chapter 8

BRAIN VS MACHINE

In this chapter we will examine the current state of the art insofar as we can compare the electronic computer with the human brain. Our conclusion, as you will see, is that with the current state of the art being such as it is, the field of artificial intelligence has a long way to go before it can produce a trading program that can match what a human being is able to do.

I'm sure you all recognize the content of the picture on the left. Yes, it's a snowflake, and it is said that no two of them are the same.

HOT, HOT, HOT

Over the years I've seen a lot of <u>hot</u> new ways to trade. It was only a few years ago that the only indicator around was the simple moving average. Following in time was Stochastics and similar indicators. Then along came a plethora of technical indicators. Subsequent to that were a rash of even more sophisticated indicators. Unfortunately, none of these indicators, from the first to the last, produced a plethora of successful traders. In fact, many of the authors and creators of the various indicators have since repudiated them.

The hot new thing in trading these days is computer generated pattern recognition. While it may prove to be a useful tool for some (even indicators work for *some*), most who will use computer generated pattern recognition techniques will fail. They will fail because they will forget to take into account a number of things I'm going to discuss in this chapter.

PATTERNS

The human brain is a wonderful thing. It was created by a power far beyond the understanding of man. In fact, the human brain alone should be proof to any thinking person that there is a God and that *all*

things were created by Him. The most sophisticated concepts of which man is capable cannot compare with the intricacies of the human brain, and to entertain the idea that it came into being through a series of cosmic accidents, or that it evolved, strains the bounds of credibility.

The brain is purported to be the residence of the mind. I'm not sure this is so. The mind may very well be a spiritual thing, in which case it couldn't possibly be contained in the brain. Spirit is not physical and therefore not subject to the physical laws of time and space. But for lack of a better term, I will use the term human brain.

The human brain is capable of accumulating an abundance of minutiae and somehow sorting and classifying these details in subtle ways that we do not even begin to understand. It is capable of organizing this mass of trivia and recalling it as something we refer to as "intuition" or "a hunch." Applied to the art of trading, some traders call this "trading from the gut." You get a gut feeling that you ought to go long or short. You have a hunch that prices for a commodity are about to crash. There is no concrete proof. You can't truly tell why or how you know. You just know. Learning to trade hunches is an art form all its own.

Researchers have determined that hunches or intuition are output from the right side of the brain. That doesn't mean that intuition originates there, it means the phenomenon known as a hunch enters our thoughts from there.

In truth, intuition is essentially pattern recognition. In some unexplained subtle way, the brain recognizes that it has encountered this before, or that what the eyes are seeing has had certain meaning in the past and therefore this may be a similar situation. It also may be aware of the probable outcome if such is appropriate to the situation.

Computer generated pattern recognition works in the same way. The computer program recognizes that this pattern is similar to one it has encountered before. It also is able to keep track of the probable results derived from such pattern encounters.

So what is the difference between what the brain can do and the computer can do with regard to pattern recognition? The difference is enormous, and when you fully grasp it you will see the glaring weaknesses in computer pattern recognition as it stands today compared with pattern recognition derived from human thought processes. As usual, we can best demonstrate this with a picture.

The computer accurately assessed the pattern on the chart below as a 1-2-3 followed by a Ross Hook. What can be derived from the computer's analysis is that you have the potential to short a breakout of that hook.

The computer sees this as a 1-2-3 high followed by a Ross Hook.

The pattern consists of 13 bars.
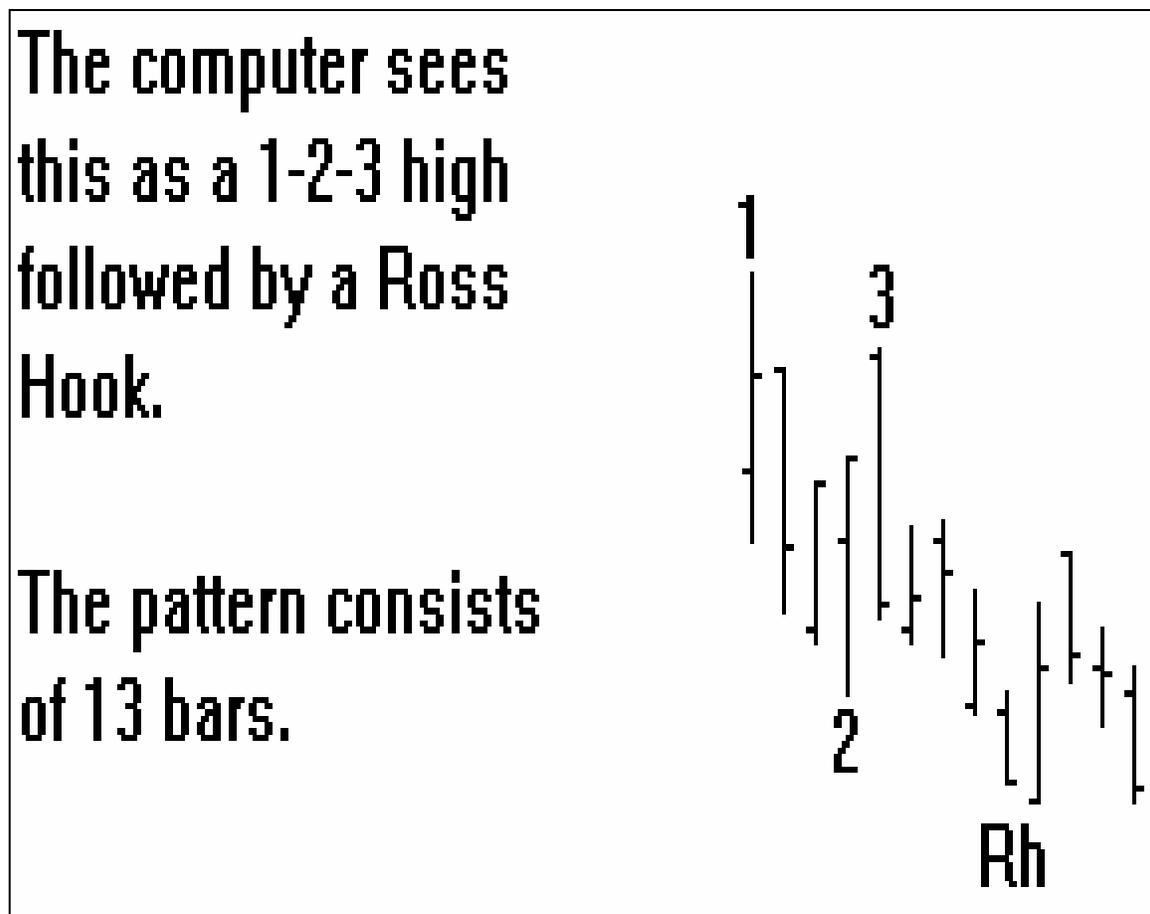
However, the pattern is completely out of context. You might very well hesitate to sell short if you saw it in the context shown on the chart on the following page.

Human pattern recognition sees a pattern in context. It is able to compare a pattern occurring in one place with the a similar pattern

occurring in another place on a relational basis. The human brain is able to make a judgment call, the computer cannot come close to anything on the order of human judgment.
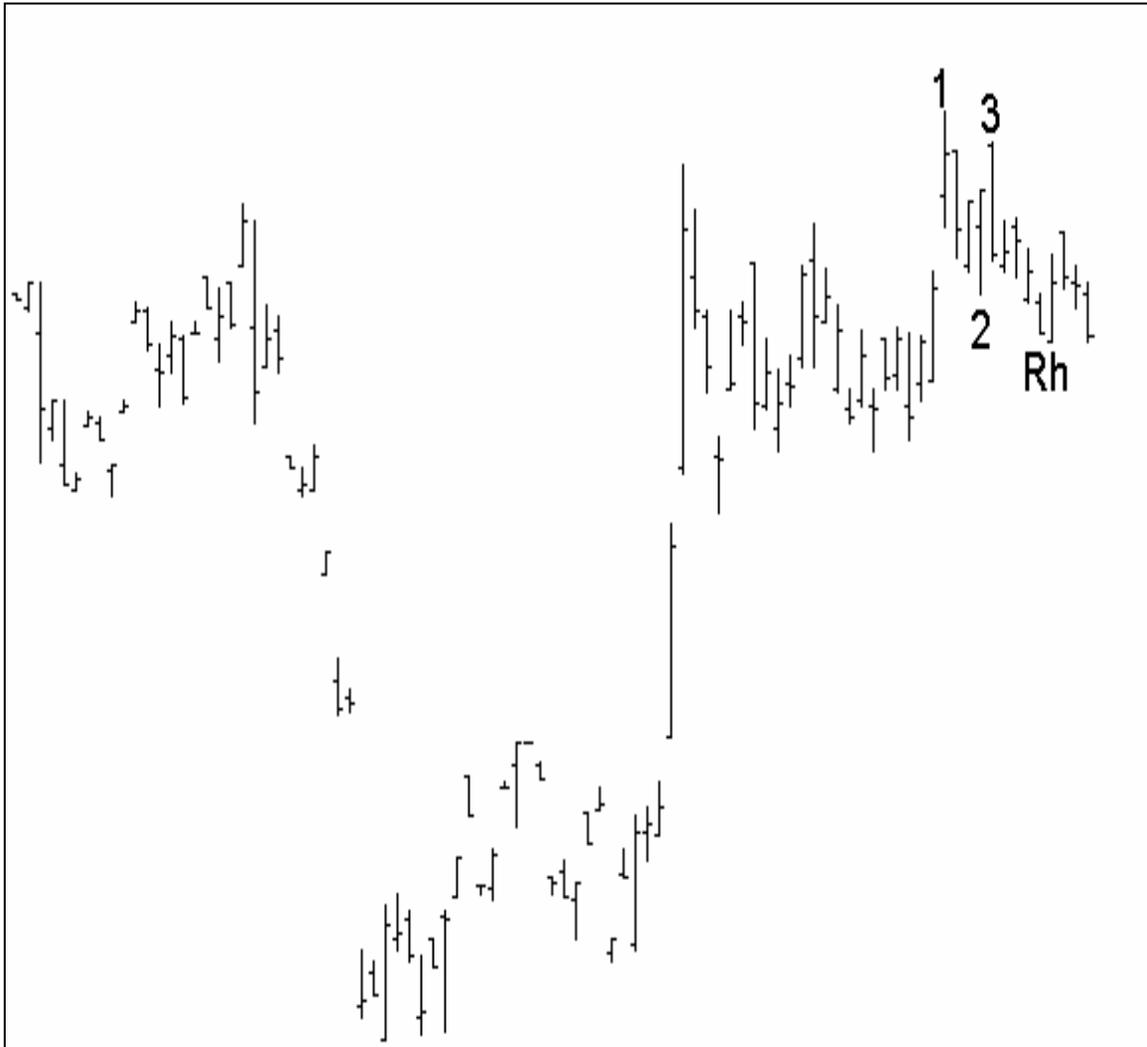
The human brain recognizes and considers the relationship among the open, high, low, and close. If there were volume shown on the chart, it would be capable of taking that into consideration as well.

Viewing the pattern itself, the brain can see that, yes, this is a 1-2-3 high followed by a Ross Hook, which could indicate a sell signal, but it also recognizes that doing so would result in a sale right into the middle of a Trading Range.

Your human brain is capable of relating all that you see to what it has subconsciously taken in and remembered from past similar situations.

The brain is aware of the time of day, the date and the time of year, in the event that seasonal or even cyclical factors come into play.

The brain can place into context the current price relative to an entire scale of prices, and can remember historically under-value and over-value for a particular market. It can also recall whether or not there was a recent event, which might explain the huge gap that is sometimes seen on price charts. Can a computer tell whether or not a gap is caused by a news event?

The human brain can also take into consideration some of the following items:

- The nature of the particular market in which the pattern previously occurred. The brain is capable of recognizing that the pattern is occurring in one market as opposed to another. It therefore is able to give a subconscious validity rating to what it is seeing. The computer cannot do this. It only knows about the particular pattern. It doesn't see the pattern as having occurred in the context of the one market versus the other.

- The human brain can take into consideration the fact that the pattern is occurring on a government report day, or the day before a holiday, or that it is Triple or Double Witching day. The computer is ignorant of these facts, but even if had them, it would take an incredible amount of programming to teach a computer exactly what it is you wanted done under every conceivable situation.

- The human brain sees a pattern relative to liquidity. It can conceptualize that the market for one reason or another is illiquid and therefore the pattern doesn't mean what it seems to be showing.
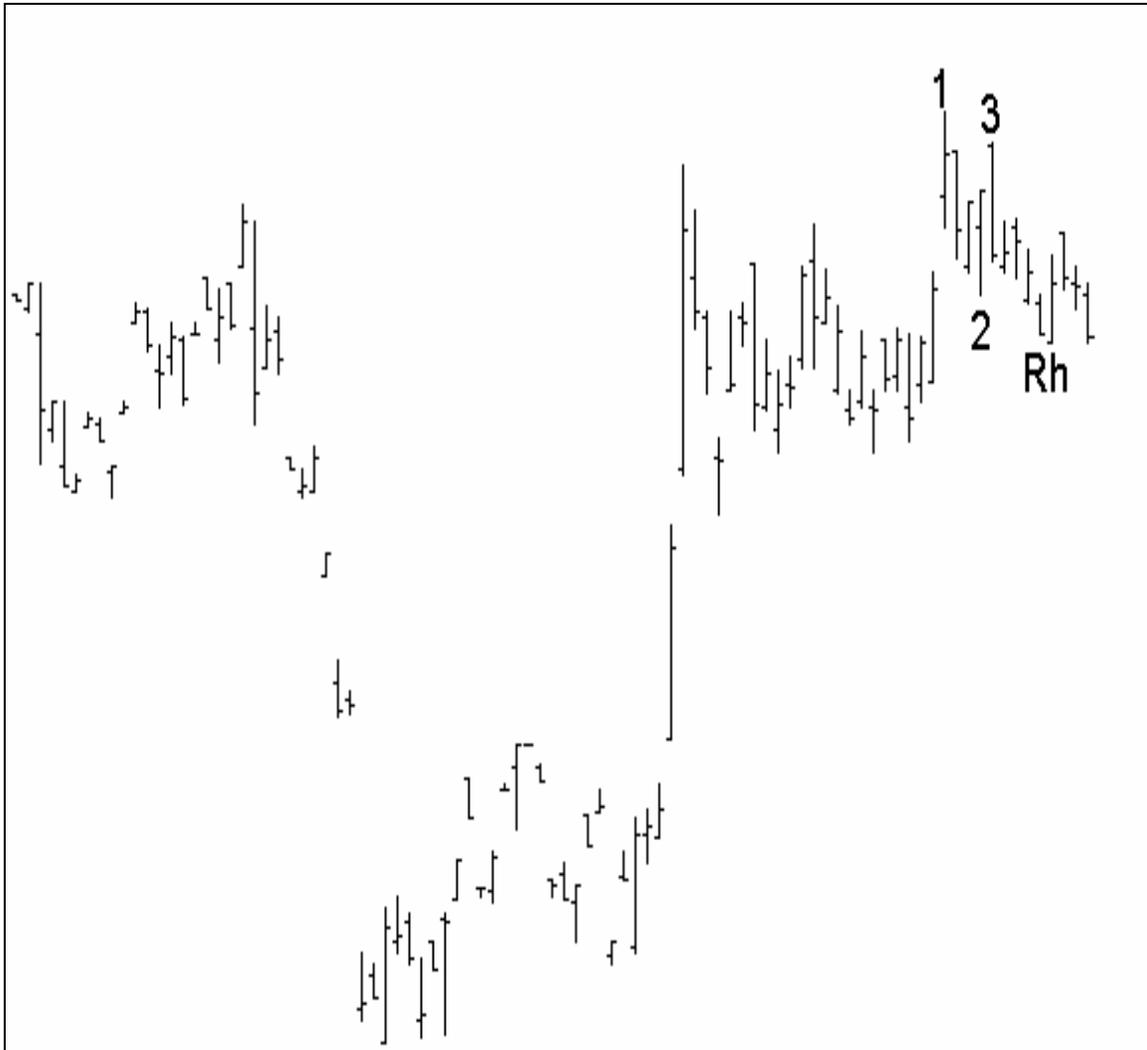
- The human brain views a pattern in the context of market volatility. It can recognize whether a pattern is occurring in a trend or in a congestion. It can recognize the relative size of the bars inherent in the make up of the pattern. It not only can comprehend the relationships between opens and closes, and highs and lows, but it has a sense that price bars are closing in the upper or lower half of the bars making up the pattern. The computer comprehends nothing. Computers simply do not understand.

- The brain has a sense of the conditions attendant to a particular chart pattern. Without your even realizing it, it may be aware that this pattern is taking place under conditions of relatively large tick size. The computer is completely unaware of such details.

- The human brain is capable of making relative comparisons. It can ascertain whether or not it saw a particular pattern in a fast market, a "normal" market, or a slow market. The computer doesn't take such things into consideration.

- The human brain is able to ascertain and assign a value to the composition of the market as to participants by looking at bid-offer identifiers on a screen where available, or through an inspection of insider trading reports, the Position of Large Traders report, market sentiment reports, or news items.

- Through the eyes, the human brain is able to view, in context, an entire market consisting of hundreds of price bars. Computer pattern recognition programs are restricted to a view of only the last x number of bars – seldom over 30.

In other words, the brain can correlate thousands of seemingly unrelated bits and pieces of information and present them to the trader in the form of a sense of probability for success. The computer is unable to do that.

It seems that far too many traders will do almost anything to avoid using the wonderful device that resides between their ears. Instead, they choose to use indicators, phases of the moon, astrological positioning, all sorts of theories, and now computer generated pattern recognition. The problem is that they choose to use these first. Instead of using their brain, and then moving on to see how these synthetic brain substitutes might enhance their perception, they choose first to use these artificial stand-ins. They have put the cart before the horse. They then find that they are so confused that their brain has become befuddled. Is it any wonder that so many traders never realize their objectives?

Such confusion leads to fear. You don't know which way to turn or what the synthetic alternative really represents. You simply don't understand the big picture or grasp the condition of the underlying market.

When the human brain finally grasps a concept, it can cause the mouth to utter "I see!" We know of no computer that can do that. Computer comprehension at this time does not really exist.

If I'm mistaken, and perhaps computers can comprehend, then the gulf between degrees of comprehension as seen in the brain compared with that of a computer is so vast that it is seemingly a gap that cannot, at present, be bridged. You, the human, may not even be aware of the details the brain is organizing into what is described as a gut feeling.

Is there any value to computer pattern recognition? Yes, if you take it with a salt-grain of reality. It can call your attention to a pattern you might otherwise not have noticed. Pattern recognition, as with indicators, can show you something you might not have picked up with just a cursory glance at a market. It may even show you a larger picture than the one on which you are now focused. Of course, whether or not to use such software is a matter of human judgment – yours!