In the 1970's an American engineer called JM Hurst published a theory about why financial markets move in the way they do. The theory was the result of many years of research on powerful mainframe computers, and it became known as **Hurst's Cyclic Theory**. Hurst claimed a 90% success rate trading on the basis of his theory, and yet the theory has remained largely undiscovered and often misunderstood.

An Almost-Forgotten Theory

Hurst published two seminal works: a book called *The Profit Magic of Stock Transaction Timing*, followed a few years later by a workshop-style course which was called the *Cyclitec Cycles Course* (now available as *JM Hurst's Cycles Course*).

There are a number of very enthusiastic advocates, prominent traders and writers who proclaim Hurst as the "father of cyclic analysis" and confirm the efficacy of the theory (including the late Brian Millard who wrote several books about Hurst's theory), but why is it that the theory isn't better known and more widely used by technical analysts? There are, in my opinion, two reasons :-

- Firstly, Hurst's Cyclic Theory is not "easy". While it is beautifully simple and elegant in its essence, it is not a simple theory to understand or to apply. The *Cycles Course* is over 1,500 pages long, and most people take several months to work through it.
- Secondly, although the **theory** presented in both the *Profit Magic* book and the *Cycles Course* is the same, there is a vitally important distinction between the **analysis processes** presented in the two. Hurst claimed his success on the basis of the process presented in the Cycles Course, whereas many people read the Profit Magic book and go no further, with the consequence that they never discover the more effective process presented in the Cycles Course.

Hurst's Cyclic Theory in a Nutshell

Hurst defined eight principles which like the axioms of a mathematical theory provide the definition of his cyclic theory. The eight Principles of Hurst's Cyclic Theory are:

- **The Principle of Commonality –** All equity (or forex or commodity) price movements have many elements in common (in other words similar classes of tradable instruments have price movements with much in common)

- **The Principle of Cyclicality –** Price movements consist of a combination of specific waves and therefore exhibit cyclic characteristics.

- **The Principle of Summation –** Price waves which combine to produce the price movement do so by a process of simple addition.

- **The Principle of Harmonicity –** The wavelengths of neighbouring waves in the collection of cycles contributing to price movement are related by a small integer value.

- **The Principle of Synchronicity –** Waves in price movement are phased so as to cause simultaneous troughs wherever possible

- **The Principle of Proportionality –** Waves in price movement have an amplitude that is proportional to their wavelength.

- **The Principle of Nominality –** A specific, nominal collection of harmonically related waves is common to all price movements.

- **The Principle of Variation –** The previous four principles represent strong tendencies, from which variation is to be expected.

In essence these principles define a theory which describes the movement of a financial market as the combination of an infinite number of “cycles”. These cycles are all harmonically related to one another (their wavelengths are related by small integer values) and their troughs are synchronised where possible, as opposed to their peaks. The principles define exactly how cycles combine to produce a resultant price movement (with an allowance for some randomness and fundamental interaction).

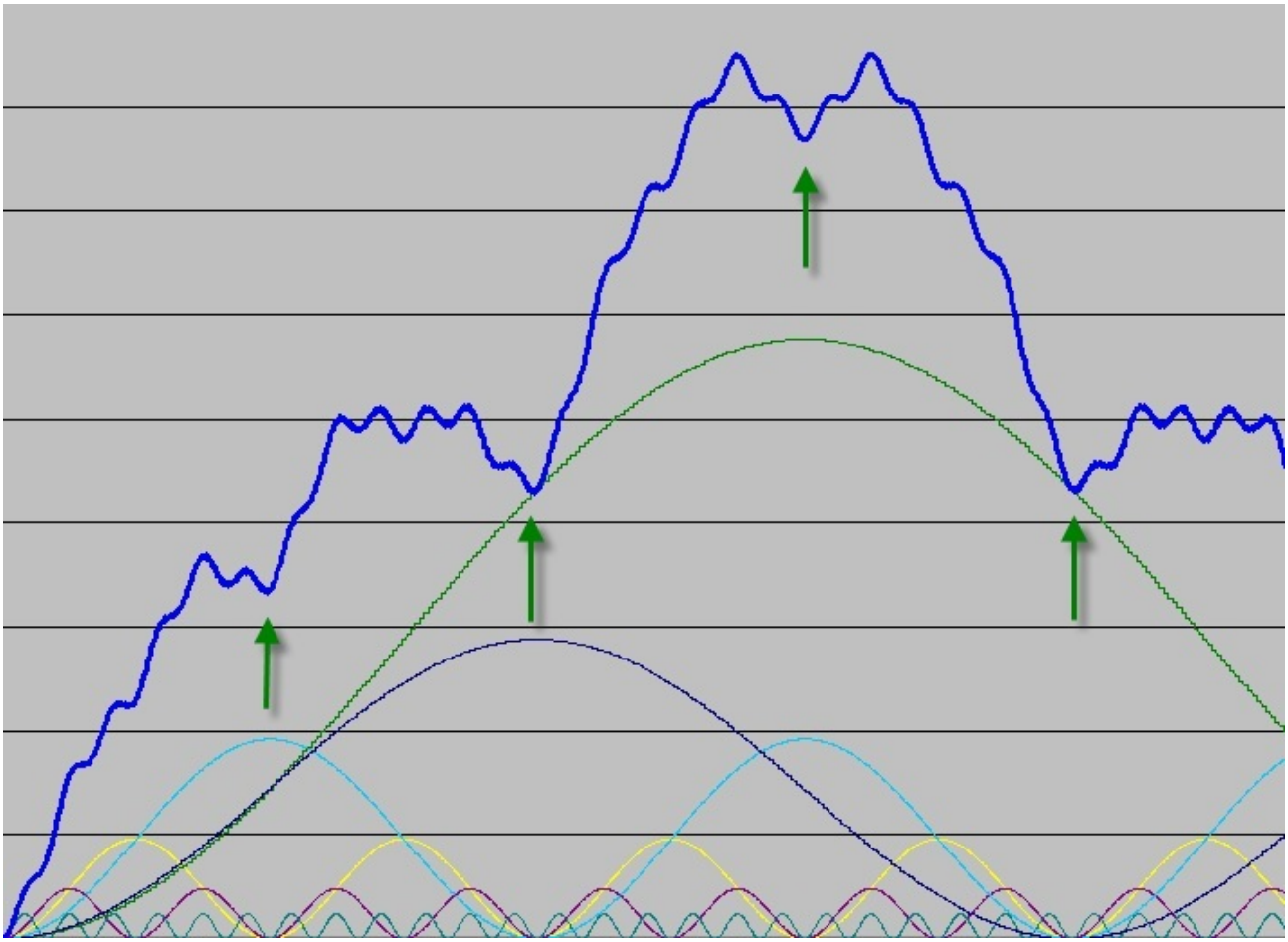

Figure 1: Six cycles combined according to Hurst’s principles to produce a composite “price” movement. The green arrows represent buying points at the troughs of the “yellow” cycle. Price movement out of the trough (and trade potential) is different for each trough because of underlying trend.

Conclusion

These eight simple rules distinguish Hurst's theory from any other cyclic theory. For instance most cyclic theories consider cycles in isolation from each other, and cycles are often seem to "disappear". By contrast cycles never disappear according to Hurst's theory, but they may be less apparent because of the way in which cycles combine. It is the fact that Hurst's theory stipulates that there are an infinite number of cycles that makes it particularly different, and also begins to explain why it is impossible to forecast price movement with 100% accuracy. Just as it is impossible to conceive of the sum of two infinite numbers, it is impossible to define the result of combining an infinite number of cycles.

JM Hurst – the Father of Cyclic Analysis

The *Profit Magic* book has become something of a classic, and it presents aspects of Hurst's cyclic theory in what might be described as its "early form". It is an exciting read because it makes so much sense and for someone seeking to truly understand the movements of financial markets it offers the promise of doing just that. However, it is in the *Cycles Course* that the full theory is explained in great detail, and this truly is the tour de force of Hurst's work.

JM Hurst's Market Cycles Principles describe the movement of a financial market as the combination of an infinite number of "cycles". These cycles are all harmonically related to one another (their wavelengths are related by small integer values) and their troughs are synchronised where possible, as opposed to their peaks. The principles define exactly how cycles combine to produce a resultant price movement (with an allowance for some randomness and fundamental interaction).

Phasing Analysis

The analysis of financial price movements performed upon the basis of Hurst's theory is called a "Phasing Analysis" because it is a matter of determining the current **phase** of as many cycles as possible. The phase of a cycle is an indication of where that cycle is in its cyclical movement, more easily understood as "how long it has been since the last trough of the cycle". Because cycles are cyclical, if we know how much time has passed since the last trough we can estimate how soon the next trough will occur, and whether the cycle under consideration is presently influencing price in an upwards or downwards direction.

Phasing analysis is the key to working successfully with Hurst's cyclic theory. There are many other important aspects to the theory (such as the *nominal model* one is working with, and the *trading methodology* one applies), but at the heart of everything lies the phasing analysis.

The *Profit Magic* book has become something of a classic, probably because it offers the promise of helping the reader to truly understand the movements of financial markets. However the book presents a form of analysis that is based on a largely "mathematical" approach and which doesn't result in the application of the full theory.

In the *Cycles Course* however the full theory is explained in great detail, and a different approach to the analysis is presented. This analysis process is truly the tour de force of Hurst's

work. It is an unfortunate irony that many enthusiastic readers of the *Profit Magic* book never progress to a study of the *Cycles Course*, because although the theory remains fundamentally the same it is the different approach to the analysis that provides the key to unlock the profits of the theory, and delivers on the promise made in the *Profit Magic* book of using cyclic analysis to truly understand the markets.

The *Profit Magic* book approach

I describe the phasing analysis approach that Hurst presented in the *Profit Magic* book as "mathematical", because it requires the plotting of several mathematically calculated displaced moving averages which are inflated to create constant depth channels around price – called Hurst envelopes. These channels are nested, and where they approach one another or themselves form a trough in their shape, a trough of the cycle (on which the channel is based) is positioned.

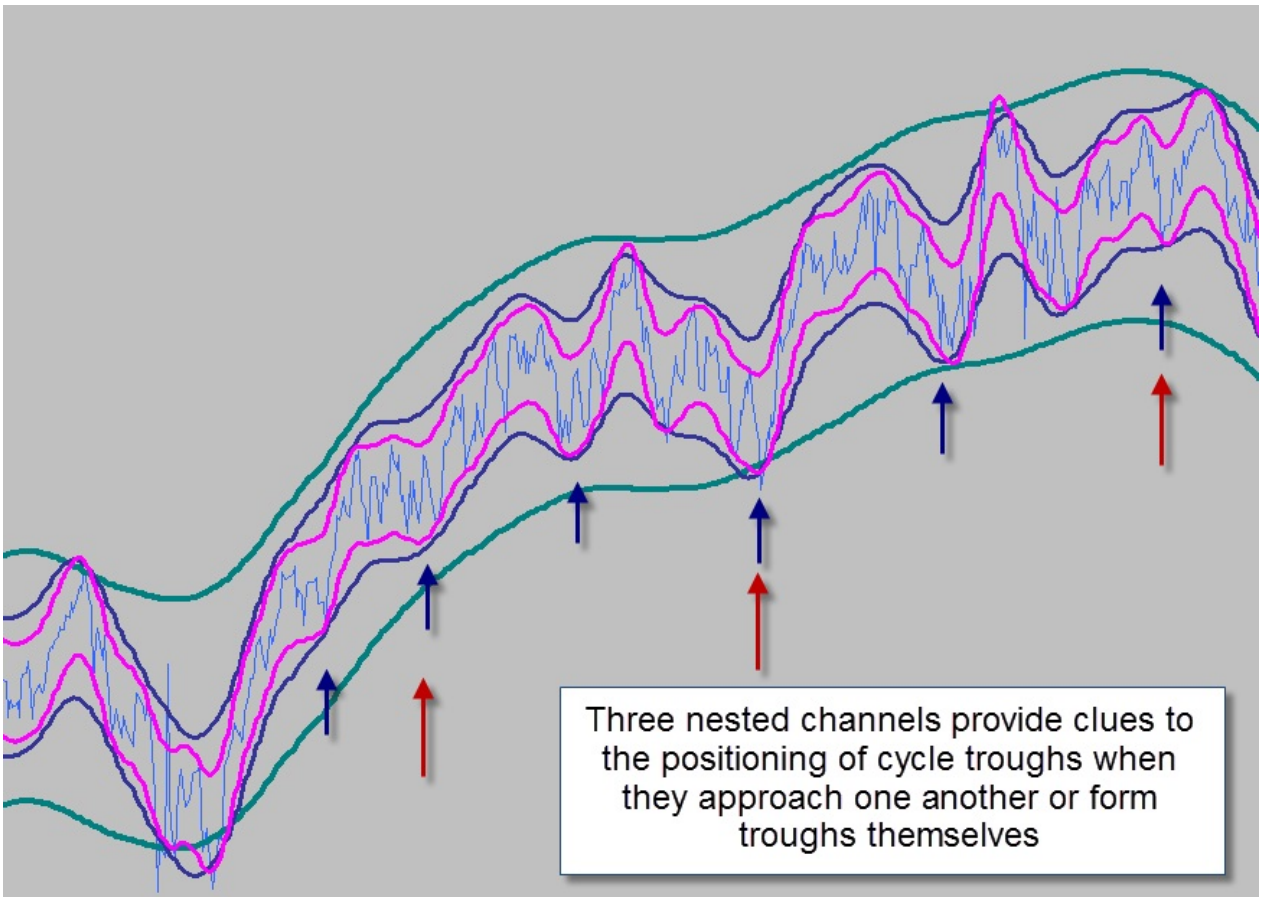

Figure 1: Nested channels are used to perform a rough phasing analysis.

This provides a basic phasing analysis, and then the moving averages are used to create projections. Because the moving averages are displaced back in time, they need to be extrapolated forward to potential points of intersection which provide the projections for future price movement. Figure 2 illustrates how well these projections work with the benefit of hind-sight.

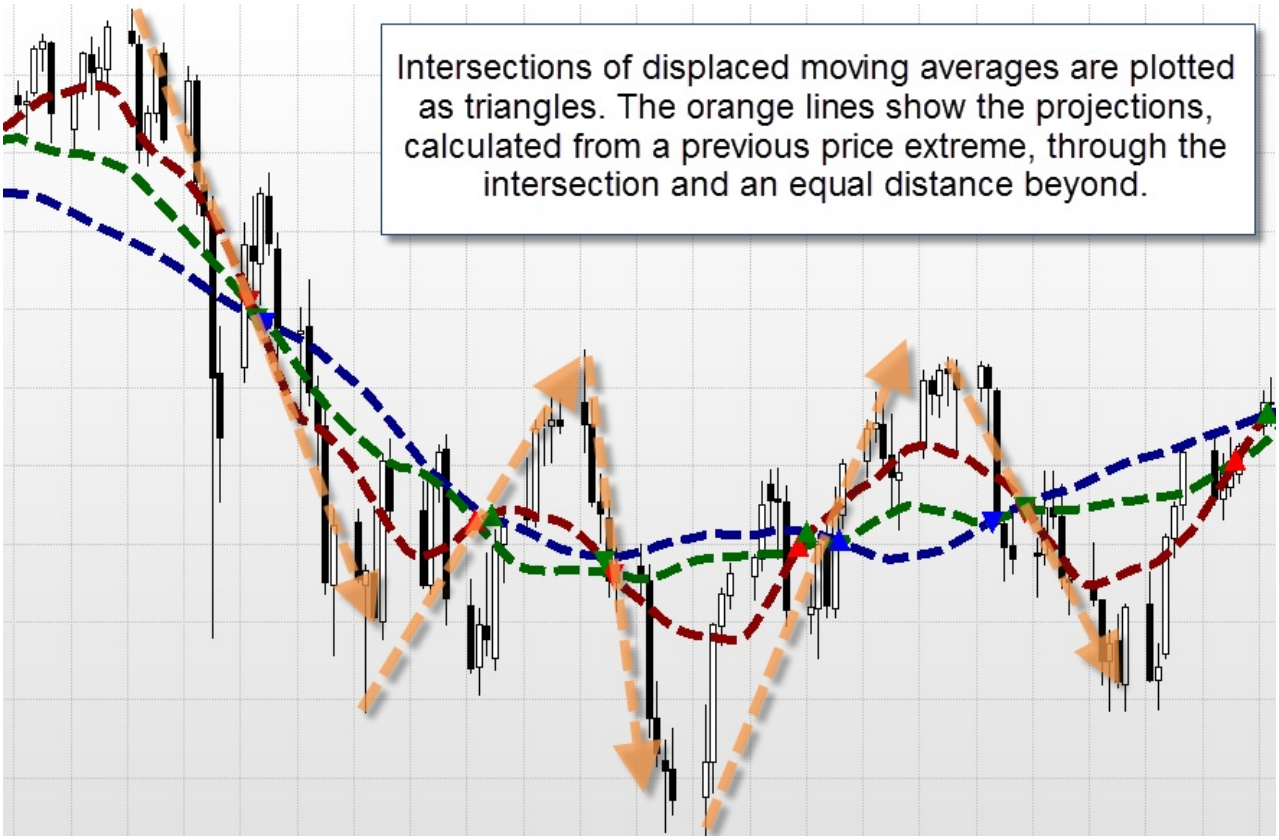

Figure 2: During periods of well-defined cyclic action in the market, the intersections of displaced moving averages provide good price projections.

Figure 3 below demonstrates the potential weaknesses of the approach.

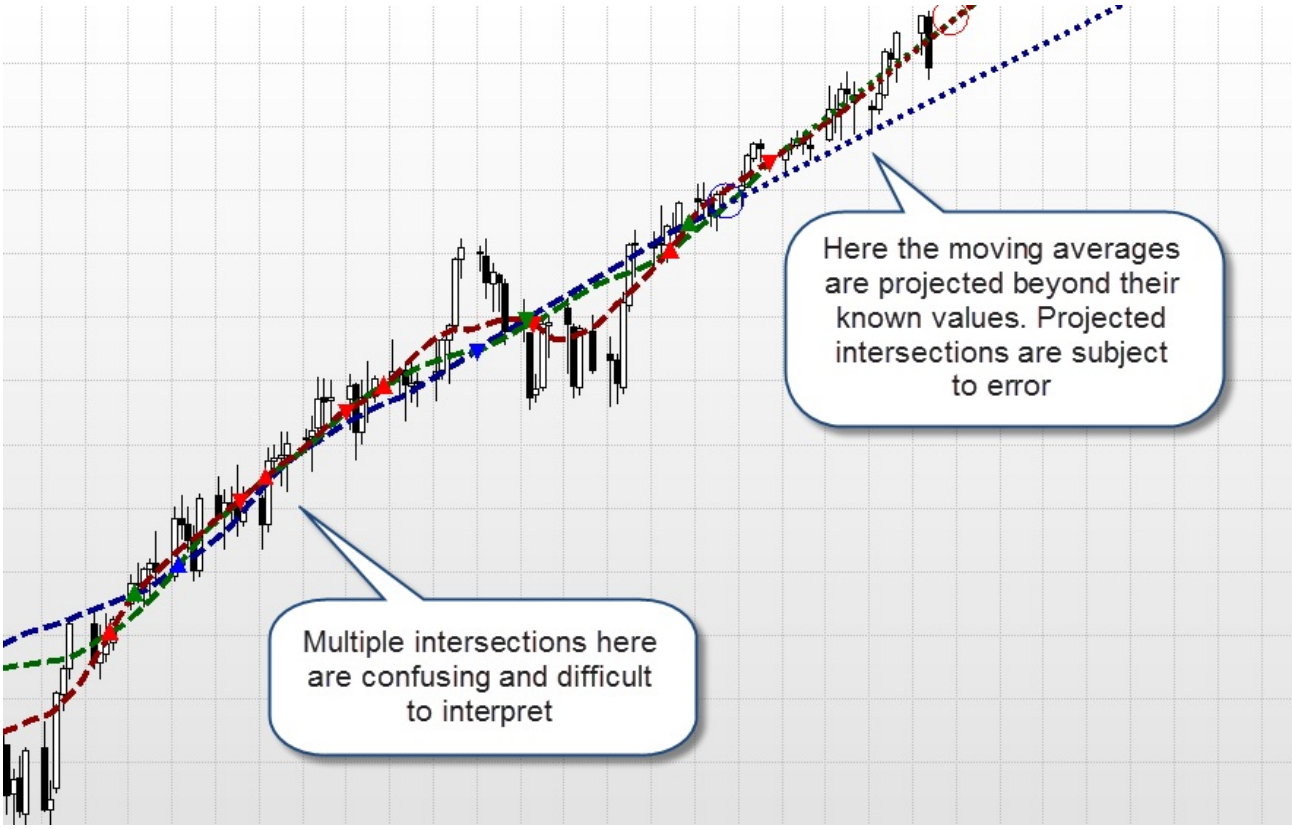

Figure 3: During periods of less well-defined cyclic action in the market, the intersections of displaced moving averages provide very poor price projections (and yet the cycles are still active).

And so two vital conditions need to be met for this process to work for a trader (without the benefit of hindsight):

- The market needs to be exhibiting well-defined cyclic action (which is a consequence of the total cyclic picture)
- The projections are only as good as the accuracy of the extrapolation of the moving averages.

There are times when these conditions are met, and so the process works well, but there are also times where the conditions are not met. And so this process is all very well, but it doesn't begin to tap into the true power of Hurst's Cyclic Theory.

Phasing Analysis in the *Cycles Course*

In the *Cycles Course* Hurst advocated a different analytical approach, a process which is simple in essence, and is based upon a form of pattern recognition and the application of an advanced (hopefully) human brain to the resolution of complex dilemmas.

The pattern recognition approach involves three stages:

Entry Stage: First of all the analyst identifies major troughs ("visually evident" troughs because they can be seen clearly) of the longest cycle that appears to be present in the data (Hurst called this the dominant cycle). If a particular expected trough is not apparent, or there

is ambiguity in the positioning of the trough the positioning of this trough is postponed until the analyst has more detailed information.

Extension Stage: The analyst then considers the next shorter cycle in the cyclic model, and identifies the troughs of that cycle using the previously positioned troughs of the longer cycle as anchoring points. The positioning of shorter cycle troughs often resolves the positioning of the longer cycle troughs, and so the analyst is constantly moving between the cycles, but generally moving from the longest (dominant) cycle down to the shortest cycle.

Completion Stage: Having resolved the shortest cycle visible in the data (the 5-day cycle if one is working with daily data), the analyst reverses the direction of the process, and resolves the position of all the longer cycles.

It is this different approach that provides the true key to Hurst's cyclic theory because it presents a complete "cyclic model": it informs the analyst of the phasing of **all** known cycles, not merely the phasing of one or two cycles. By understanding the complete picture (as complete as is possible, given limitations on available data) the analyst can trade according to how the cycles COMBINE to influence price.

Having performed a phasing analysis, the results are plotted on a chart using a notation system proposed by Hurst, involving the placing of diamonds beneath the price to represent the troughs of the various cycles. The higher the pile of diamonds, the longer the cycle which is forming a trough at that point.

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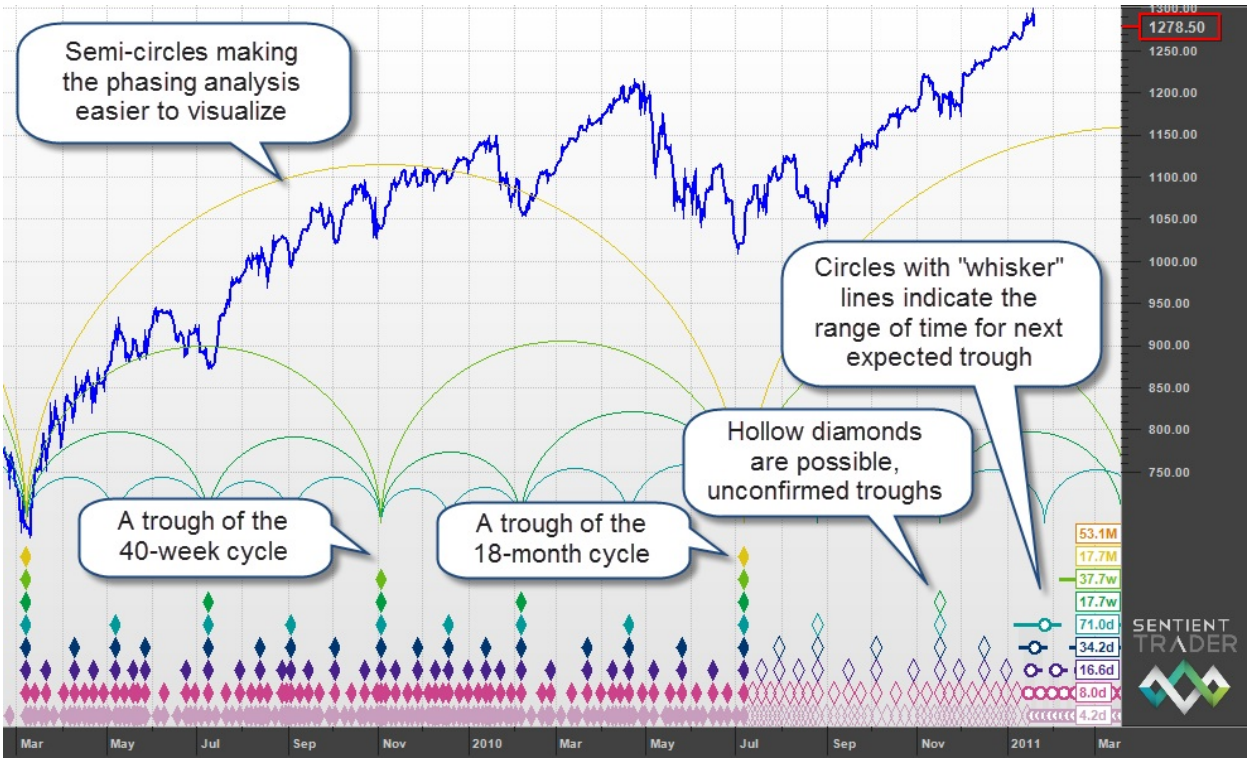

Figure 4: This full phasing analysis presents the complete cyclic picture, using Hurst's diamond notation for marking the positions of troughs. Cycles should never be considered in isolation when using JM Hurst's cyclic theory.

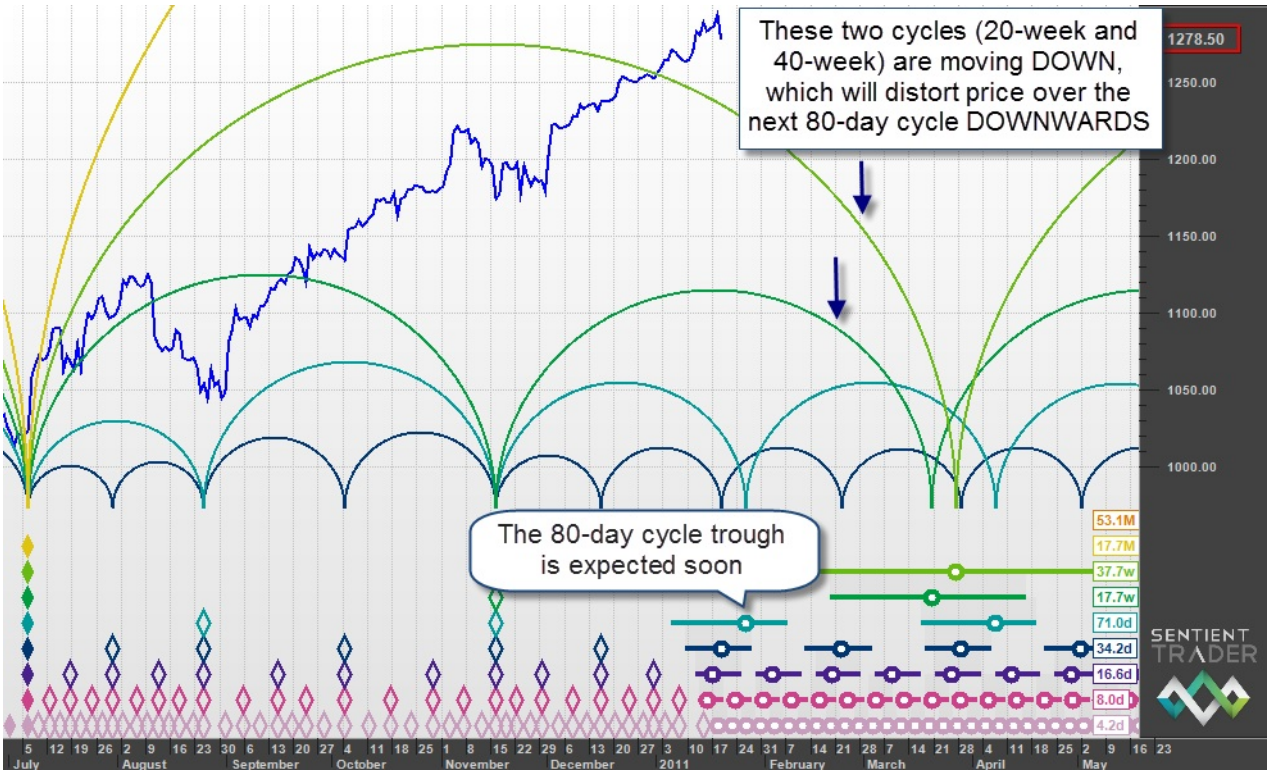

Figure 5: A trough of the 80-day cycle is expected soon. However this does NOT mean that the market will rise for 40 days! Longer cycles are pressing DOWN, and so the rise out of the 80-day cycle trough is likely to be brief and disappointing.

Hurst's Cyclic Theory, as presented in the Cycles Course is a very powerful analytical tool that can lead to consistently profitable trading decisions. I hope that this article will encourage you to explore further and embark upon a journey that could change the future course of your trading in a profitable way.

In addition there are numerous Videos and Webinars which explain Hurst's Market Cycles that can be viewed in the Sentient Trader Online User Resources. To access them, you an Sign-up on this page to "***Visit Resources***".

This White Paper is primarily about trading JM Hurst's Market Cycles, but to begin, let's look at Cyclic Analysis again.

Overview of Phasing Analysis

The true genius of Hurst's theory as presented in the *Cycles Course* was in the way that he proposed an analysis should be conducted. The analysis is called a "Phasing Analysis" because it is a matter of determining the current phase of as many cycles as possible. Hurst advocated a process which is simple in essence, and is based on a form of pattern recognition and the application of an advanced (hopefully) human brain to the resolution of complex dilemmas. This method differs from the approach he presented in the *Profit Magic* book which was purely "mathematical" in that it required the plotting of a displaced moving average (inflated to create channels around price – the well known Hurst envelopes).

The pattern recognition approach involves identifying major troughs ("visually evident" troughs because they can be seen clearly) of the longest cycle that appears to be present in the data (Hurst called this the dominant cycle). If a particular expected trough is not apparent, or there is ambiguity in the positioning of the trough the resolution of this trough is postponed until the analyst has more detailed information. One then considers the next shorter cycle in the cyclic model, and identifies the troughs of that cycle using the previously positioned troughs of the longer cycle as anchoring points. The positioning of shorter cycle troughs often resolves the positioning of the longer cycle troughs, and so the analyst is constantly moving between the cycles, but generally moving from the longest (dominant) cycle down to the shortest cycle. It is this different approach that provides the true key to Hurst's cyclic theory. This approach elevates analysis from a mathematical process to a skill (perhaps even an art) which the analyst strives to refine and perfect.

Having performed a phasing analysis, the results are plotted on a chart using a notation system proposed by Hurst, involving the placing of diamonds beneath the price to represent the troughs of the various cycles. And then one moves on to the second aspect of Hurst's theory: making trading decisions on the basis of the cyclic analysis.

This aspect of Hurst's theory is once again distinguished from other cyclic theories. Most cyclic theories advocate buying a market when the cycle is rising, and selling when the cycle is falling. Hurst's trading methodology on the other hand takes into account the fact that price is the result of a composite of many cycles, and only advocates buying when a cycle is rising, and the two cycles longer than the trading cycle (in the harmonic collection of cycles) are also rising. Similarly one should only sell (go short the market – exits are a different matter) when the two cycles longer than the trading cycle are also falling. There are further guidelines to be observed before selling short, because of the principle of synchronicity which tells us that troughs are synchronised – and therefore much easier to trade, whereas peaks are not synchronised and are therefore more complicated to identify, and much more difficult to trade.

Timing Trade Entries and Exits

Beyond the above overall guideline as to when one should enter the market, trading according to Hurst's cyclic theory requires that one times one's trading actions by means of using two cyclic tools: the FLD (Future Lines of Demarcation) and the VTL (Valid Trend Line).

The FLD (Future Line of Demarcation) of a particular cycle is calculated by transposing the median price by roughly half the wavelength of the cycle in question into the future.

The VTL (Valid Trend Line) of a particular cycle is a trend line which joins two consecutive troughs or peaks of that cycle (as seen in the price movement), and then further validated by obeying a few simple rules defined by Hurst.

These tools provide evidence of a cyclic nature that a trough or peak of a particular cycle has occurred, and so they are used to create what Hurst called "action signals" – when price crosses an FLD or VTL a signal is generated, whereupon one should take an action (such as buying or selling).

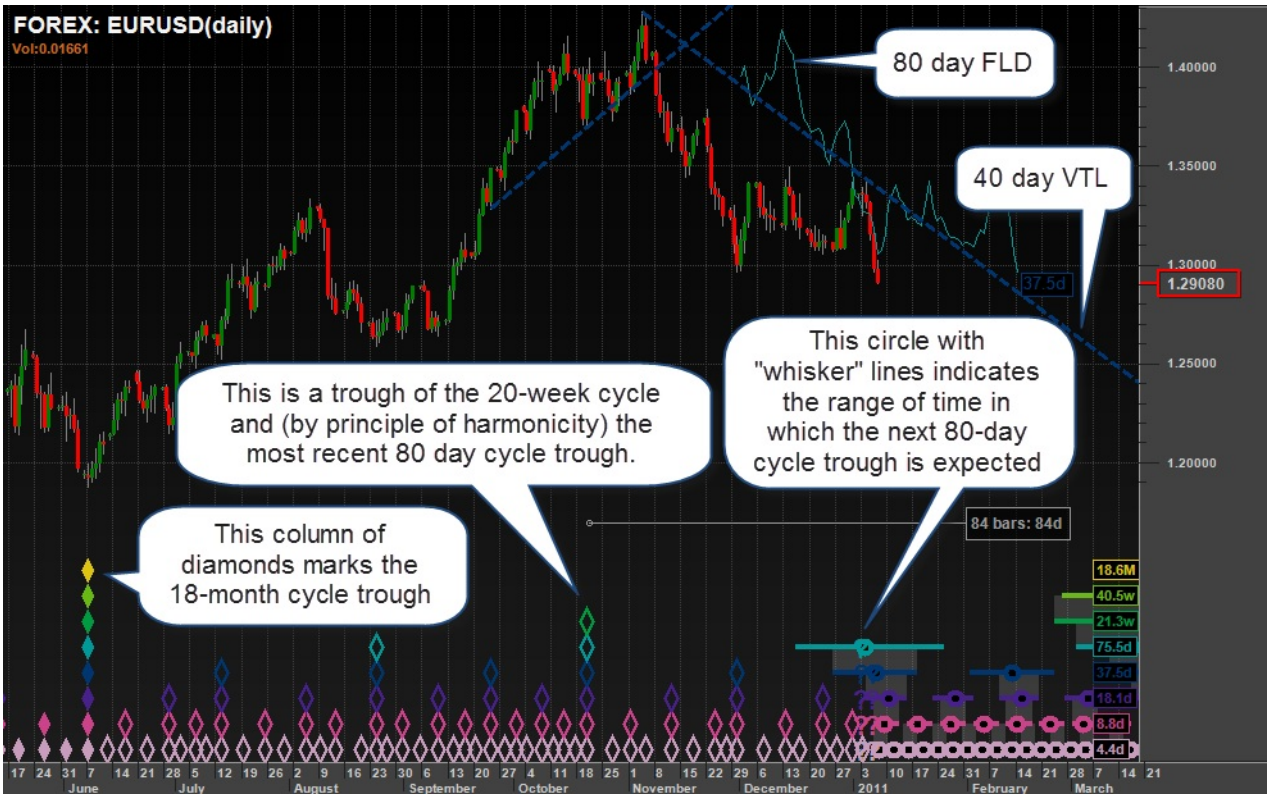

Figure 1: The Euro to US Dollar forex pair with a cyclic analysis presented in Hurst's diamond notation. Each diamond represents a trough of a cycle. As of the 7th of January 2011 a trough of the 80-day cycle is expected (it has been 84 days since the previous trough). The 40-day VTL and 80-day FLD are plotted.

This is all very well, but if one were to wait for evidence that one's trading cycle had experienced a trough (by waiting for price to cross the FLD or VTL applicable to that cycle) then one would have missed a good deal of the price move. This is where the true beauty of Hurst's principles emerges. Because of the principle of synchronicity (which states that troughs are synchronised) one knows that the trough of the trading cycle will be synchronised with the troughs of several shorter cycles. Therefore when evidence is received that a trough of a much shorter cycle has occurred (by price crossing the FLD or VTL applicable to that shorter cycle) then one can take action. Because of the shorter wavelength of this synchronous trough one catches much more of the price move.

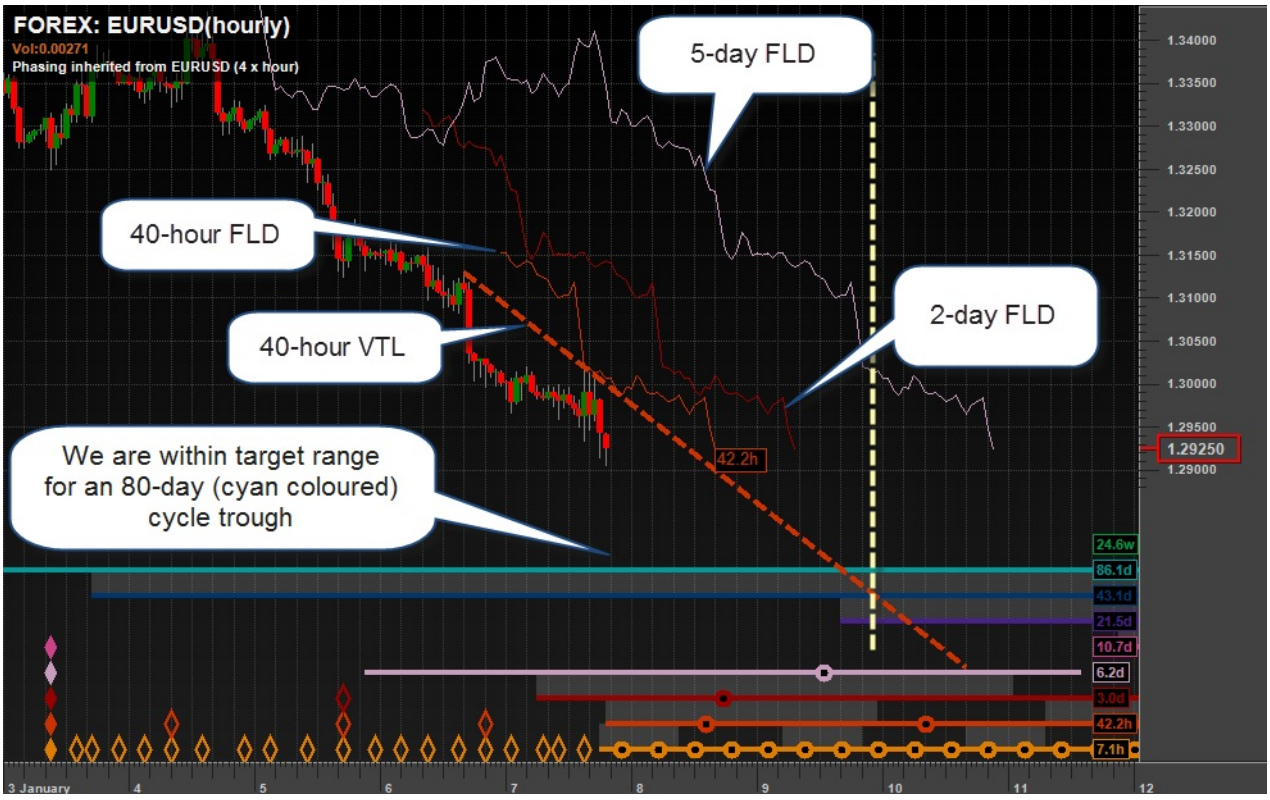

Figure 2: The Euro to US Dollar forex pair in more detail. An hourly chart with the FLD's of the 40 hour, 3 day and 5 day cycles plotted, and the VTL of the 40 hour cycle. These lines provide good entry levels for trading the move out of the expected 80 day trough. The vertical dashed line represents the time at which trading will commence on Sunday night.

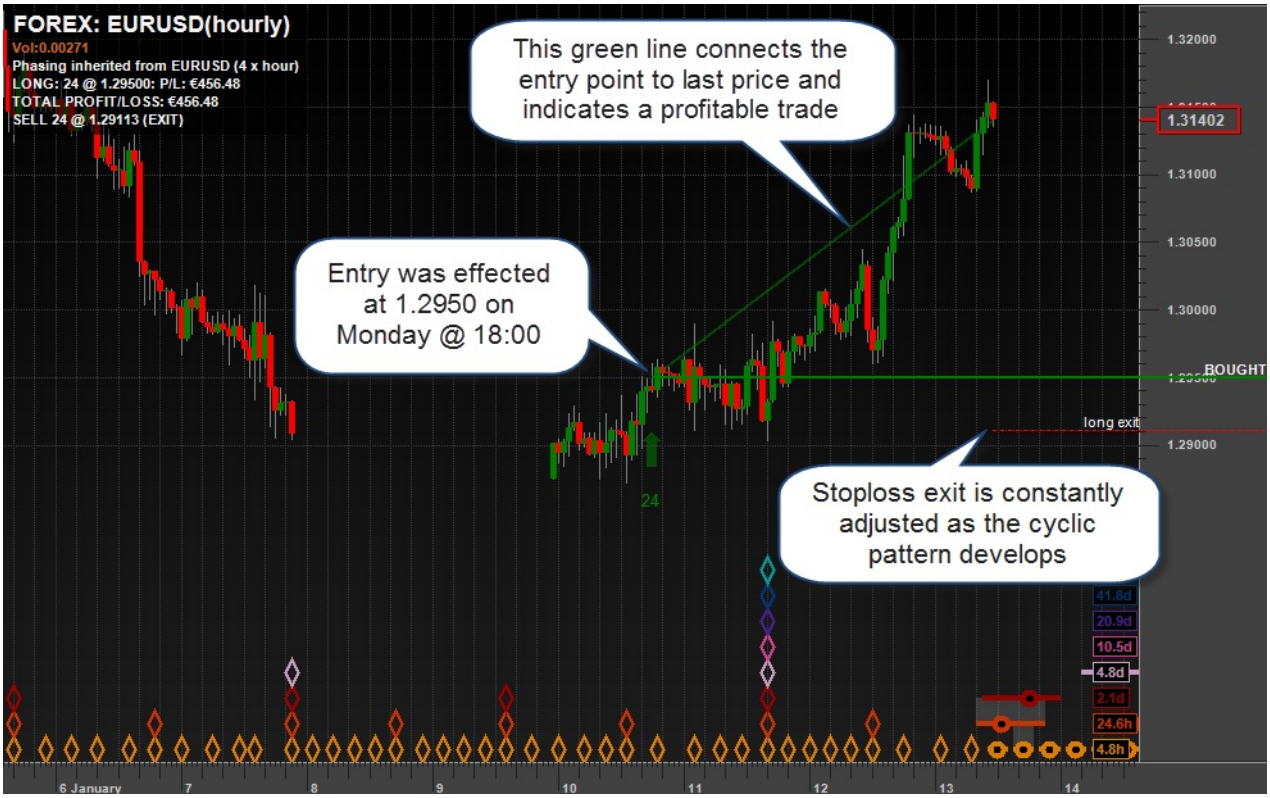

Figure 3: On Monday morning (10th January 2011) the market starts rising out of a trough, and a long entry is effected at a level determined by the 2-day FLD. A stop-loss exit is positioned according to cyclic principles.

Beyond Hurst (Intraday Trading)

Hurst published his theory almost 40 years ago, and it is a testament to the validity of the theory that it can be applied effectively to the markets today. Of course now we have the extra benefit of being able to work with the power of modern computers. It has been an exciting and rewarding experience to extend Hurst's theory into the realm of intraday analysis, a journey which has presented many challenges. For instance, it is a feature of Hurst's cyclic theory that cycles move through time, regardless of whether we are trading financial markets or not. A cycle keeps moving through the weekend, but we have no evidence of it because we aren't trading. When analysing daily data this is not much of a problem, but when analysing intraday data it becomes a fairly big problem. On a Monday morning one is faced with a gap of over 60 hours in most markets, during which time there would have been a good deal of cyclic activity. There would have been 7 or 8 full waves of the 8 hour cycle, and if that cycle is your chosen trading cycle, Mondays present an interesting challenge: it will usually take several hours to identify the current phasing of the 8 hour cycle.

Introducing Sentient Trader

Performing a good phasing analysis can take some time. And then making the trading decisions based upon that phasing analysis can take even more time, so that trading on the basis of Hurst's cyclic theory has always been a time consuming process. I found the process so time consuming that it was completely impractical for me (as a private trader) to trade cycles shorter than several months in length.

And so I started to develop a software program that would do all the time consuming work on my behalf. That was six years ago in 2005… and now the software, called Sentient Trader, does indeed do all the time consuming work, and a good deal more. It performs an impressive phasing analysis which is based on the pattern recognition process that Hurst advocated, and it also allows one to exert one's own knowledge and experience onto the analysis. It will do this all the way down to cycles of only a few minutes in length. It will then also make trading decisions on the basis of that analysis, and use an extended theory of filtering trades according to the character of the market.

What Next?

Through reading this series of White Papers that:

1. Introduce JM Hurst's Market Cycles Principles,
2. Describe the importance of Cyclic Analysis and
3. Outline the power of trading JM Hurst's Cycles,

you will have begun to understand how you too can profit from Hurst's Cycles.

Source:

http://www.sentienttrader.com/cyclic-theory/white-paper-1-hursts-market-cycles/

http://www.sentienttrader.com/cyclic-theory/white-paper-2-hursts-cyclic-analysis/

http://www.sentienttrader.com/cyclic-theory/white-paper-3-trading-with-jm-hurst/