Emilio Tomasini

Systematic Trading – Myth or Reality

Mechanical trading is perceived by many to be the solution for all the technical and psychological trouble of speculating in the markets. However, systematic trading simply substitutes the problems of discretionary trading with other more subtle kinds of difficulties. Market entry is made easier, but trading remains a risky, ambiguous venture.

This article presents systematic trading from a different perspective. The interview explains the positive side as well as the traps of systematic trading based on experience. At first glance, many systematic traders may think it counterproductive to discuss the weaknesses of mechanical trading. On the other hand, we think that uncovering the true values and failures of mechanical trading is an important element of successful system trading and will help traders to profit from the variety of choices offered in today's technical analysis software products as well as turn key trading systems.

Selecting the best traders – this was his vision since the very beginning. And it is why he selected the trading systems approach to trading. Emilio Tomasini, age 38, is known as the organizer of the Top Trader Championship, the unique competition in Europe open since 1999 to all traders and all brokerage houses *(www.toptradercup.com*). Tomasini is a professor at the University of Modena in Italy where he teaches Economics of the European Integration and has a long experience in financial journalism. He started *LombardReport.com* in 1997 with the idea to build "a factory where you select or produce good traders". And the Top Trader Championship is included into this philosophy, having audited more than 1,200 traders from all over Europe since 1999. *LombardReport.com*, the financial website in Italian, where all the signals are executed with real money, is in Italy a kind of authority with more than 20,000 readers and 250 subscribers, mostly professional traders, high net worth individuals and institutional corporations. The English version of *LombardReport.com*, *www.toptrader-report.com*, follows the same logic.

So the first questions you will ask to Emilio Tomasini is basically obvious; Who are the best traders around ? Discretionary traders ? Systematic traders ? Can you train an unskilled trader into a money making trader ? Tomasini knows the answer since his job is indeed to audit the traders' accounts entering the competition: good discretionary traders are like artists, in many cases they cannot be duplicated. Or at least they can teach only to other natural artist traders. Average traders should be mostly mechanical traders since only with trading systems or with a very strict systematic approach they can come close to (but never to the same level !) the most successful discretionary traders. Artists like Remo Mariani and Giovanni Borsi (two Italian traders that the European audience already knows) or the German trader Birger Schaefermeier are seldom imitated by beginners. If a beginner is able to profit from their experience it means that he too has the same iron talent. Average people can benefit only 10% from their experience. The very top traders are rarely something most of us can even understand. For example, Giovanni Borsi, winner of the eighth edition of the Top Trader Championship with an astonishing result of 11,500 Euro in only one day with a starting capital of 60,000 Euro, of which only 3 out of 381 trades were losing trades. Giovanni Borsi is the king of scalpers in Europe. But who can do the same? If trading is a business, and average traders are businessmen, trading systems are their production tools. This is why among the long-term survivors of the industry, Emilio Tomasini always found a big share of systematic traders. The biggest losers are discretionary traders: in the long run they are going to go broke (with only a few exceptions of natural geniuses). Tomasini started to trade systems in 1996 and he still does with many pilot accounts and other personal accounts. He also developed a business in advisory services, for all large Italian institutional banking customers and corporations. Emilio Tomasini hopes to still have a long life in business since, not being an artist, he is a good trading system developer and traders selector. He always states that "my power as a trader are my contributors": and effectively *LombardReport.com* collects the best souls in trading systems development in Europe, like Urban Jaekle in Germany, Alexander Papadimitropulosz in Hungary, Enrico Malverti in Italy and many others from many other countries all over the world. This forms a melting pot of traders that is building up the biggest concentration of mechanical trading knowledge in Europe.

TRADERS´: What personal experiences can you tell us about systematic trading?

Emilio Tomasini: When ever I think about the subject of trading systems two pictures come to mind. The first has to do with a series of seminars put on by Larry Williams that I followed in Las Vegas and Europe. While TradeStation 4 became the standard of the entire industry, Larry Williams continued using an obsolete and today mainly obscure programme called System Writer Plus. What's worse: he used it in his seminars and played around with the code in front of his audience. When I asked him why he didn't want to switch to TradeStation 4, he dryly answered, true to his style, that it would be a waste of time because "good concepts fit in little space". I have to admit at the time I thought Larry Williams just didn't understand. Over time it became clear to me that I was the one who didn't understand.

The second picture that comes to mind has to do with Richard Dennis. The Supertrader, interviewed by Jack Schwager in his book "Market Wizards", was of the opinion that if someone published a profitable system in the Wall Street Journal no one in the finance industry would pay it the slightest attention. A trader's ego forbids him to judge any external input rationally.

TRADERS´: What about the problems of discretionary trading that systematic trading cannot remove? The first challenge is the constant change of the markets reflected in the change of characteristic in historical prices.

Tomasini: The behaviour of the markets depends on the number and quality of the traders, the available liquidity, the structure of the market, and from the historical context in which decisions take place. For example if a market is still "young" and not yet liquid, you can trade it quite successfully with a breakout strategy. This is because many market participants are still inexperienced and simple trend following strategies already capture many of the market's tendencies.

In hindsight, the charts of the stocks on the Prague Exchange of 1994 seem like an ideal world. The Czech financial market was taking its first steps then. Exchange data was sold in a bare attic floor on the outskirts of Prague by an engineer with an old dog and a sad face. His desk was setup pretty much in the centre of the room an obvious sign of his devoted drive to divine perfection. I bought his service with historical data, but unfortunately, I could not dial into his data server from Italy. The good engineer – in the style of the previous regime's "customer care", thought he didn't have to worry about my problems. All my dreams of getting into the Czech market fell apart with each data update. But I still remember the charts well. It almost seemed as if an architectural draftsman from the old party had drawn them to spread joy among technical analysts. Support and resistance, perfect breakouts right out of the textbook, not one false signal. It was the dream of "real socialism" tailor-made for the charts. In young markets, traders' conduct develops precisely according to an old pattern: the first buyers are the well informed. After that, it is the imitators who buy, and finally it's the ones whose purchases are closing the long positions of the well informed.

TRADERS´: Ideal conditions for experienced traders whether discretionary or systematic. However, sooner or later in most markets transformations take place that change that perfect world.

Tomasini: Between 1997 and 2000, hundreds of traders with simple intraday breakout systems in the DAX and NEMAX futures got rich. The majority of them quit trading in 2000 because breakouts in developed markets do not work. Unfortunately, there is no guarantee that historical prices will behave the same way in the future. Besides that, there is no guarantee that a stock for instance will always exist as we know it because of delisting, bankruptcy, or a change in the company's main business activity. It is similar with futures that are

confronted with the introduction of new markets (e.g. the Fib30/S6P – MIB 40 on the Italian exchange) or even only new trading hours (such as the interest rate and index futures this year on the Eurex or the DJ EuroStoxx 50 as many as 3 or 4 times during the boom years at the end of the 1990s). The inconvenience of constant change in historical data is transferred to the programming of code. "If I hadn't changed my system every time the drawdown overstepped the alarm level, I wouldn't be alive today" is what Giuseppe Lugli, a systematic trader with years of experience, told me.

But then a new question arises: what kind of statistical reliability can a trading system have that's "maintained", i.e. whose rules and parameters are changed on the fly while trading? The answer is very cynical: for many system traders, trading a "maintained" system is still better than consigning to the mood of the moment.

TRADERS´: Is the psychological stress of following a system greater than that needed to risk a discretionary trade? Where do you see the advantages of discretionary trading?

Tomasini: The psychological stress of system trading, especially for highly qualified traders with strong egos, is very high. A system's buy and sell signals are mostly contra-intuitive, even when the trader is aware of the system's underlying logic. And the fact that systems are based on statistics alone reduces the pride of a trader, who in fact seeks the affirmation of his ego.

In the case of a long drawdown (i.e. the bottom of a cumulative profit curve) the doubts that prevent a systematic trader from sleeping, are the same for a discretionary trader. The fundamental question: "will I still make profits?" posed by the discretionary trader can be translated as "does the system still work?" for the systematic trader.

If I may make an empirical observation, considering my antique presence in this industry, then the following: On average, trading systems reduce the effective profitability of trading, on the other hand however, they increase the chances of a trader's survival. In addition, they allow the management of larger sums of money, which would certainly not be possible with a discretionary method.

TRADERS´: Could you please explain the first point? Why do trading systems reduce trading's effective profitability?

Tomasini: The experience of the "Top Trader Championship with Real Money", held for the eighth time this year, shows that the "big money", i.e. big collected profits, is only possible in strongly inefficient markets (e.g. during the stock market's golden years before 2001). Less impressive, but nevertheless interesting, profits characterise more the discretionary traders with strong and motivated personalities (Giovanni Borsi, Birger Schaefermeier, Remo Mariani etc.) who, however, posses special technical knowledge. In any case, these traders represent only a fraction of the millions of people that are more or less professionally involved with market speculation.

To the question of how many people I know who have really become rich with trading systems, I have to say I know no one. To the next question of how many people I know who have attained good performance with them, my answer would be that I know some, but even so, I can count them on the fingers. To the last question of how many people I know that have attained good performance over a period of more than ten years, my answer is almost nobody. Obviously, I am only speaking about those results that can be verified. I don't mean the scores of others who "say" they have done well, because, as I'm sure you know, they are countless.

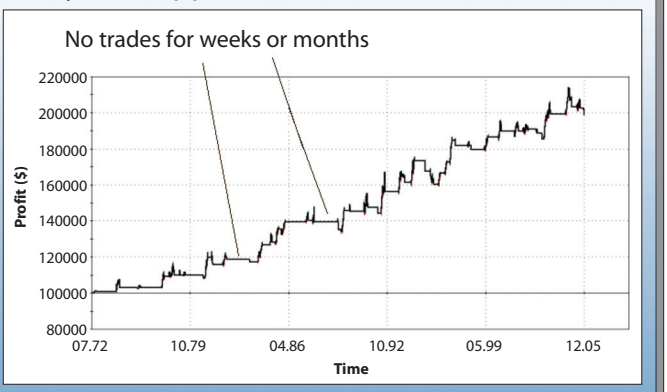
Explanations for why no one earns money with trading systems over a long period are varied. One reason, among others, is that many traders are incapable of structuring themselves in a business-like way. For example, it would already help some if they would trust one another with the management of their trading signals and share things like bookkeeping, research, and programming. People who trade often hope they never have to become businessmen. Nevertheless as Joe Ross says "Trading is a business" and that goes for every trader. A second reason is the short-sightedness and intellectual arrogance that dominates the trading world: someone with a profitable trading system often doesn't worry about finding new solutions, creating systems for other markets or entering into cooperation with other traders. Successful systematic traders too often wrap themselves in their success and wait for their own impending demise.

Furthermore, many trading newcomers, who have been successful in other, previous endeavours such as company projects, as freelance contractors, or in their studies, fail in trading. Highly qualified specialists in their field of endeavour often do not want to accept that in the markets they have to start all over again like any other beginner. They overestimate themselves and engage in speculation with too much capital right from the start.

TRADERS´: And as far as the second theory goes, that mechanical trading increases the chances of survival in the markets?

Tomasini: That is true based on my experience. At least it helps many engage in trading parallel to other endeavours. There are several reasons why using trading systems increases a trader's average chance of survival. A systematic trader accelerates and simplifies the decision making process with the help of his pre-defined rules and can concentrate better on the development of new ideas instead of having

F1) System Applied to the Euro/Dollar Future



The stepped equity line of a trend following system that uses a price pattern as entry filter. The pattern is relatively rare which is why the system often does not generate trades for weeks or months at a time. The goal of a good system is to generate a few, but in return, reliable signals. Smoothing the portfolio equity line is accomplished by trading several systems in several markets and time frames. Data: daily, adjusted. Data Vendor: CSI UnfairAdvantage.

to closely follow the market on his screen every second. In this way he reduces stress, but does not remove it. The average life span of a mechanical trader is decisively longer than that of a discretionary trader and infinitely longer than that of a scalper. For the latter there is a Charles Schwab joke that always applies: "They are like butterflies. They come for one season and leave the next".

As far as trading systems allowing the reliable management of large sums is concerned, you only have to compare the average performance of American hedge funds or managed accounts with German investment funds. Here it becomes clear how intensive the automated management of derivatives in the U.S. is thanks to trading systems, which are more wide spread there than in Europe, and attain results that are hardly imaginable here.

TRADERS´: Then it follows that closer cooperation of systematic traders with institutional money managers would make sense. Where do you see the difficulties here?

Tomasini: As soon as a trader has identified a successful formula he immediately thinks of the possibility of managing "other people's money". If my system earns "just" 40% per year it earns a salary, if I use it on 100,000 Euro. If I use it on 100 million then it will earn millions. Why don't I suggest it to an institution? It's simple. An institutional manager does not have an interest in renting a third party system because he could endanger his own job that way. I would like to support this bold assumption based on our own experiences at *LombardReport.com*. Among our 200 subscribers are many well-known names of the financial industry and media. Remarkably, all of them pay out of their own pocket and do not bill their firms! Nobody in their company should find out that to be number one in convertible bonds all that is necessary is to be a *LombardReport.com* subscriber and to read the article by Guido Bellosta.

Another example: An English fund fired more than 100 employees, from managers to analysts, after having rented a mechanical system. Suddenly the employees were no longer needed. No fund manager or employee of a hedge fund likes to bring in a Trojan horse by renting a trading system.

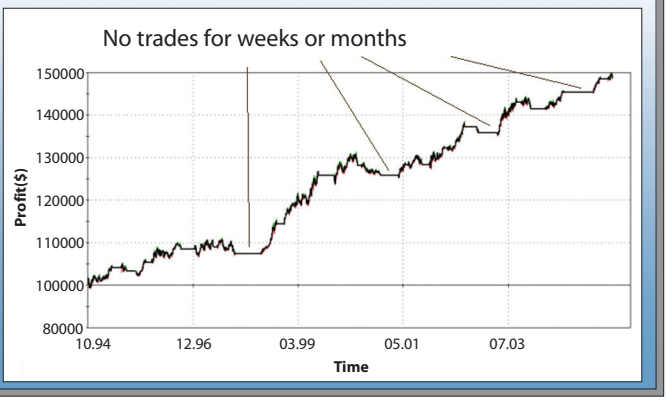
Better to earn the salary and commissions and lose customer money instead of losing your job and the salary and the commissions by letting customers earn too much. Many do not even know what a trading system is. Studying is difficult and the books have complex formulas in them. Rather stay on the paved path and continue working like the last twenty years. With a few small distractions 5 pm is just around the corner.

TRADERS´: Your summary of systematic trading?
Tomasini: Trading is difficult, even with trading systems. You can never underestimate the necessary effort involved. I have made this mistake myself, perhaps the most widespread mistake in our job. Trading is difficult, stress filled, and disappointing. You have to have enough capital and work with the right attitude. You have to analyse costs and profits just like any other company. And, as in any other company, there are periods of expansion and recession. It is difficult. And it remains difficult despite the use of trading systems. Who else would work as salesman, plumber or professor if it wasn't difficult?

TRADERS´: Another example of a myth is the steadily growing equity curve without any pullback, the way you see it in every good sales prospectus; your opinion on that?
Tomasini: The myth of the steadily growing equity curve without drawdowns or strong volatility of any kind is a phantom. The question that one must answer is totally different: can I see and compare the equity line of a trading system applied to real money for at least 4 to 5 years with the equity line of historical testing of the same system? Unfortunately, only in the very rarest of cases. And, on those rare occasions, you will notice that the "real" equity curve is always irregular, with long static periods, peaks and pullbacks that never occur in theory. I do not trust a trading system that shows a linear or even worse an exponentially growing equity curve. I concentrate exclusively on trading systems that have a stepped profit curve. A stepped curve means that at most times the equity line moves horizontally because the system is not in the market. That means the system has a mechanism to judge when it is right to trade and when it is not. That kind of system with a stepped, imperfect equity curve can be integrated well into a system portfolio. It will usually contribute to satisfactory portfolio equity growth. I remember in 2001 how a few programmers ecstatically plotted an equity line for a couple of intraday systems based on the DJ EuroStoxx 50 future. How happy they were as they stared full of awe at the equity line. They looked as if Raffaello had drawn them. Just two years later these systems just fell apart because of the low volatility and liquidity and every systematic trader flew out of the market. But the programmers fine-tuned the code down to the last detail. They polished it to exasperation. A concept that could be summarised in two lines of code would be turned into a terrible ordeal with pages upon pages of code; all for nothing. It ends up becoming pure intellectual masturbation, totally useless and potentially destructive.

TRADERS´: Which brings us to our next myth, that of the programmer. Is good programming knowledge necessary in order to participate in systematic trading?
Tomasini: A detractor of mine once said, "He can't program at all" as if I had contaminated myself with something awful. Programming trading systems appears to be an endeavour reserved for scientists, aerospace engineers, or mathematicians. Everyone else should rather leave it alone and draw lines on charts like crazy little draftsmen. Nothing could be further from the truth! Ideas count in trading systems and they should be good ideas. Whether they are stolen or copied, your own production, bought from a third party or original doesn't count. Only the ideas count. You can always find a Ukrainian programmer, a

F2) Same System Applied To The Bund Future



cousin who's an engineer, someone who wants to supplement their salary with a few extra hours of work. Besides that, consider that probably the most widespread professional programming language for systems is Easy Language for TradeStation, because it is "easy". You just have to want it. And be consoled in the knowledge that a programme polished to the last detail doesn't work: code has to be short to work right, the more complicated it is the worse it works. Paradoxically, code attaining positive performance in the majority of markets despite stepped equity curves, is better than code delivering a wonderful equity curve on a single data array. Additionally, portfolio management can often compensate for bad programming: a good idea badly programmed but spread over a group of markets, will deliver better results than code programmed by a professional and super optimised for one market. By optimising, I don't mean only the rules but also the entry parameters. So go for it: If you learned ancient Greek, Latin, or mathematics or just how to build electrical circuits or do the plumbing, then you will also manage to learn Easy Language.

TRADERS´: What is the chance of getting rich with a good trading system?
Tomasini: No one is going to get rich with a trading system. Remo Mariani, Top Trader in 2002 and editorial staff member of *LombardReport.com*, always used to say "The people who come to the markets are those that want to get rich, not those who want to earn their bread" He is a discretionary trader, who boasts a smooth and consistent equity line although he did not become a millionaire right away because of it. Remo Mariani is right and his philosophical view should be transferred to systematic trading. Trading systems do not create a million Euros unless you invest millions of Euros. If you invest modest capital you attain modest benefits. Everyone bares the responsibility of whether the capital they invest in trading is perhaps better placed in another venture.

TRADERS´: Do you know of a systematic trader in possession of programme code that no one else has? I mean something really unique that, if revealed, would be the equivalent of giving away a valuable secret?
Tomasini: The myth of open source or closed source programmes. In the business of trading system programming, many believe that a good system possesses some kind of obscure secret that can never be given away. Disclosing the secret supposedly leads to the total loss of the system's effectiveness. But, after ten years in the business, I am

sorry to have to say that all – and I mean all – successful systems that I have ever seen represent only more or less complex workings of operative concepts that are already known to the public. The sources of successful trading systems are often commercial code that, once cracked, spread like a virus among programmers. De facto, the programmers do nothing more than change them by inserting or omitting their own filters and conditions.

At the core, however, the concepts are preserved and the same old soup just gets reheated. The only thing that changes is the cook preparing the soup. Of course, every cook believes he has reinvented the wheel and would rather be torn to shreds before giving away his code. Although, to put together an efficient system it would be enough to just rummage trading website libraries and rework the code found there. Aside from that, you have to realise that those who programme trading systems have a dozen of them in their desk drawer. They often use the best ones themselves and usually don't have any problem at all revealing the weaker performing systems and passing them on.

When negotiating the purchase of a system always remember the following: a really good programmer can always give away a few systems for free. If he does, then he understands that it is adequate to buy a couple of books and study programming until Friday in order to code a robust system in just a few weeks.

TRADERS´: So you should not make it any more complicated than it is…

Tomasini: Absolutely. In my business I have worked with a few hundred people who deal with trading systems. Let us say that I've met most of an entire generation of traders. But because the market apparently always needs new blood, I can't claim to know all the traders out there. That is because over time the desire to meet new traders sinks exponentially.

I can assure you that the average quality of trading systems represents the reverse image of the education and programming ability of the traders. Your astrophysicist cousin and your uncle, with the Ph. D in Thermodynamics from Harvard, are of little help here. It is better to copy known concepts and to adjust them to your own personal risk profile than it is to programme systems from the ground up.

TRADERS´: Tell us a little about the sale or renting of trading systems.

Tomasini: The Internet allows anyone the possibility of setting up a website and selling trading systems. Doing it profitably is an art from in itself. You first notice that when you are already in a sinking ship. In the financial industry, there are more websites selling trading systems than there are offering generic financial news, because it is less expensive to let a system run than it is to write 20 articles a day. Usually it's systems carrying the name of a woman or an incomprehensible acronym. At first glance, it seems like a wonderful business: no running costs and just revenues that transform into profits. Signals simply sent via SMS or displayed as Flash on the website. Economics teaches us that there are no revenues without costs and no profits without investment. The first costs that a potential seller of trading signals must carry before he can venture into this business are what he must pay to receive a password at the local chamber of commerce in order to view the financial statements of his competition. This would allow an assessment of whether or not it is worth entering this business at all. But difficulties present themselves immediately. It is not always possible to find a company statement because many of them are partnerships or dubious legal constructs (Caiman Islands, San Marino, State of New York, Tax Registration number of the brother-in-law's butcher's shop, etc).

But if you do get the chance to view a statement, the laymen will immediately notice that none of these businesses generate revenues of more than a couple ten-thousand Euros. You ask yourself: why? The spontaneous answer is that commercial systems don't work. But this is the wrong answer: commercial systems, not only those from *LombardReport.com* but also from many other firms, are more or less functional. What doesn't work are the traders executing them!

They usually lose their capital before they know that the system will be right sooner or later. Or they lose their interest or are disappointed. Or they discover that it is easier to run a modelling agency than it is to trade. At this point, I'd like to impart some of my own experiences. In this business you must sell trading systems, talk with users, with programmers, negotiate, and deal with several dozen programmes just to understand that they do not differ much from one another.

Furthermore, you must consider how long a person sitting at the computer needs to receive the signals and enter an order. All of that results in a huge weight that only a few lucky people can handle. In the end, the renting and selling of trading systems is more a form of self-education than a profitable business.

TRADERS´: How does one find and develop good robust systems?
Tomasini: Now that I do understand. Out of academic habit, I always ask myself the following question when dealing with a new problem: what is the current state of the art and which solutions do the experts in this area recommend? In the business of system selling, it means to first surf to an online bookshop such as, for example, the trading library of *LombardReport.com*. Second, it means to select from the hundreds of books available.

Since I am convinced that in some respects trading represents a science, I immediately eliminate all "esoteric" subjects such as Gann, Elliott, Astro Finance, Fibonacci, and so on. In this way, I avoid books that do not deal with statistics, mathematical formulas or programming codes. A serious trading methodology must be historically testable i.e. it must be programmable. Above all, it must be possible to define it in unmistakable terms. If a book contains code or system reports it is immediately put on my shopping list. Nevertheless, there is a second level of books that are standard works despite their lack of code examples or system reports. Authors such as Thomas DeMark, David Landry, Barry Rud, and Joe Ross. But these books come after I have bought all, and I repeat all, books with code in Easy Language or Metastock.

TRADERS´: What makes systematic trading difficult in comparison to discretionary trading, especially in respect of psychological requirements?
Tomasini: I would transcribe systematic trading as the following: "The loneliness within the loneliness". As is known, trading is a lonely endeavour. But in contrast to system traders, the discretionary trader can still at least socialise with other discretionary traders at the bar and find comradeship. For example "you know, as resistance was broken and I pushed buy, I was mistaken and then I read the news and then…" while still another would say "I saw an order for 21.05 on the book, but then I knew it was a fake and…". He can tell a lot about what he did and what he will do in case this or that happens tomorrow. The mechanical trader in comparison is a rare type with few kindred spirits.

Even if he could find someone similar, what could he say about the market? "That line 29 of his code has a tight stop, but in testing it worked great?" Of course, he can talk about the broker, his DSL line, the computer, TradeStation or complain about the low volatility. But the arguments that he has in comparison to the discretionary trader are trivial and inconsequential. In any case, this is hardly the stuff of interesting conversation. The moral of the story? If loneliness is a problem for the discretionary trader, it is a curse for the mechanical trader.

TRADERS´: Your Summary?
Tomasini: Since 1996, I've had the opportunity in my occupation to speak and work with a majority of Italian mechanical traders. For all of them, as well as for me, the following saying is true: "An ape that sits at a piano for a long enough time will compose a sonata sooner or later", in the sense that sooner or later whether technically talented at the programme level or less talented on the intellectual level, (or for example like me) those who manage a huge amount of patience. The system or systems they create are the result of their view on life, their social status, their intellectual honesty, their fears, their insecurities. A trading system is a part of us that we code, a part of our psyche, our apprehensibility, our values, our trust in others and ourselves combined.

There are systems with hundreds of programme lines that can be condensed to a few lines of code, systems of only a few lines, but that deserve the right, similar to the Divina Commedia, to be expanded upon. There are programmers that accept effort and struggle as a part of trading, as it is a part of any other endeavour (and you won't see any perfect equity curves and system reports from them either), and there are programmers that believe trading is a leisurely walk (and from them you will see unrealistic profit curves). Sometimes it is intentional but sometimes it is simply a view on life. When you talk to these people, you notice that the former battle every day with life and have a concrete worldliness about them, while the latter are dreamers that probably have a natural talent for programming, although they never have really dealt with life and simply engage in trading to kill time, a distraction from the present, that beneath the existential profile doesn't satisfy at all. Every trading system has a soul of its own and if it originates from someone else, you may find you cannot use it for yourself at all.

I've seen poetic programmers who have taken literal myths of words out of quantitative statistics without having made a single trade in their lives. And I have seen programming craftsmen that can summarise the entire life of the markets in just a few lines. It is the eternal dilemma of the myths that become reality, and the reality that becomes myth. And mainly, it is about a reality that is never black or white, but is instead grey.