Securities and Exchange Commission Historical Society
Interview with David Harding
Conducted on June 18, 2013 by Ken Durr

KD: This is an interview with David Harding for the SEC Historical Society's virtual museum and archive of the history of financial regulation, June 18, 2013 in London. I'm Kenneth Durr. Let's start with the background. Are you a London native? Where did you grow up?

DH: Until age ten, I grew up in a place called Coulsdon in south London, and then at ten I moved to Goring-on-Thames in Oxfordshire because the institution that my father worked for, which was the Commonwealth War Graves Commission, moved its offices from Victoria to Maidenhead in Oxfordshire. It was a government-funded enterprise which was involved with the burial of all the war dead from all the Commonwealth nations all over the world, and my father was in charge of the gardening aspect of the Commonwealth war cemeteries.

KD: How about that; unusual career. I also read that he was involved in some investment and that that was something that you knew about.

DH: Yes. He had a colleague at work who he talked to about stocks and shares. He inherited a little bit of money when his mother died in the 1970s and I think he was motivated by his conversations with his colleague, and then he inherited this money to start thinking about investing in stocks and shares. And he was very impressed with this colleague,

because this colleague had advised him in 1974 when the U.K. stock market at its low had a market capitalization of $10 billion. Tony Benn, the most left-wing industry secretary in history, could have nationalized the whole British economy for $10 billion, which would be one medium-sized bond now, but he failed to take the opportunity. My father did take the opportunity to buy some shares during that period when really I think the market was down 80 percent in the U.K. It was the most dramatic bear market in U.K. history, bigger than the bear market in the U.K. in the 1930s. The searing experience in America is the 1930s, but the 1970s was your worst in equities in the United Kingdom, and the fact that his colleague, Jim, kept the faith at that time impressed my father very, very much.

My father followed his investment advice and respected him very much, and when my father died a few years ago (my mother died this year), Jim's children were at the funeral and they gave me his investment diary—Jim Taylor, who was the person who influenced my father—and his investment diary starts in 1945. I have it here. They're not so interested so they sent it to me, because they knew this story about me being influenced, so they sent me the diary. The first purchase is in the 5th of March, 1945, so it must have been fifty stocks in G. G. Groves for fourteen and six each.

KD: That’s a little black book with a difference, isn't it? (Laughter.) So this made an impression on you I take it?

DH: Yes. I think he gave me a small amount of the money he inherited, and as a teenager I started reading the daily share recommendation columns in the *Daily Telegraph*, which was the newspaper that he got in my teens, and bought shares in three or four companies: BP, Marley, Gratton, and Woodside Petroleum, which still exists this day and I wish I'd hung onto the shares. (Laughter.) Woodside Petroleum has been a very good investment in the last forty years.

KD: So as a teenager you're watching the stock market, you're even investing, but nonetheless then you go to college and study physics. How did that happen?

DH: I was watching it in not an intensive way at all. Sometimes you read about Warren Buffett and some of the other hedge fund managers, they're quite intensively involved. I simply bought a few shares and read the daily columns a bit, but I wasn't following it intensively. My main interest was punk rock music, outside my school studies, so I was a very assiduous student and very competitive and very successful.

KD: Where did the interest in physics come from?

DH: At the time, I used to say that I was interested in understanding the origin of the universe and the ultimate constituents of matter. My family was Christian and I was brought up as a Christian, I was confirmed, and I was a serious boy and young man, and, if you're serious and clever, then it's not really surprising to have philosophical motivations. I think my motivations were dual. I was interested in understanding the origin of the

universe as a purely philosophical motivation. I was also interested in doing exams for which you didn't have to revise. If you're good at them you didn't have to revise, because I found revising to be tedious. Who wants to revise? I hate to revise. I did lots of revising because I did very well in all my exams, but I was trying to minimize.

I often can't tell where the lofty or the base motivation was dominant, really, but, one way or another, between the lofty and the base motivations, I ended up studying physics. I've always been interested in the lofty aspect of trying to understand the universe, and physics is the most obvious thing to study when you're trying to understand man's place in the universe. We've been very productive in the last hundred years.

KD: Given that, did you consider academia and going on as a professor?

DH: My interest in the origin of the universe was shared with my interest in punk rock music and pretty girls (laughter), and it had to take its place in a portfolio of interests. I don't remember feeling that getting into academia would be the right way to get lots of pretty girlfriends. I think probably I was mistaken because I probably would have done better in academia, but I seemed to think as a young man that going and becoming frightfully successful—all I can remember is that I felt I didn't want to work in an ivory tower. You have these ideas you get into your head when you're twenty and they're very shallow ideas, but they are what determine your destiny obviously. That's the shallow idea I had in my head. Now, I look rather wistfully at academia and think how nice it might have been. I think if my father had been a professor or something like that then I probably

might have felt that that was—just as if your father was in television you might go into television, or if your father was a politician or a businessman you might go into business.

KD: But you went into finance. Tell me a little bit about the process, your first experience.

DH: I went into finance. At Cambridge, I did well and I applied for all the highest paying jobs basically, particularly at the ten leading American investment banks, all which offered you a flat in New York and a general pathway to glamour and sexual success, and I was rejected by all of them, quite correctly probably. I did get one second interview by Banker's Trust. But that was a significant blow to my ego because I had never been rejected for anything before in my life at all.

KD: Why do you say quite correctly? Was it because of your background in physics rather than economics or something like that?

DH: I suspect I wasn't what they were looking for. I didn't know that I wasn't what they were looking for. I think I might have had a very good chance five years later of being accepted as a physicist-mathematician. I think the fact that Banker's Trust gave me a second interview was just a bit early-ish. I think I was probably a bit naïve in some certain respects. Again, if I had come from a banking family or something like that, on top of the other qualities that I had, then I would have probably been a very good choice. But these jobs are competitive, so you can have nearly the right skills but not quite the right attitude.

KD: But you made it to Wood Mackenzie then.

DH: Yes, that was to me, I'm afraid, a very second-rate option. I had thrown in one application, assuming naturally that by occasion of rigorous method and applying to every major U.S. investment bank I was bound to get at least one of them. I had thrown out about one other application to a British stock broker, which I didn't want to work for at all, and I got that job, and returned from my hitchhiking around America with a few weeks to go and lived in a youth hostel. For the first six weeks, I went to work with Mackenzie as a graduate trainee in the gilt department, but this was a disappointment to me. I thought it was exciting, but it definitely wasn't what I had hoped for. But it's all I got actually.

KD: When did futures come into the mix, when did you first get involved in that?

DH: I joined as a trainee in the gilt department, which is bond futures, in the bond futures department, and I should think certainly within a few months of me starting there it became apparent that there was going to be a startup of a new futures exchange and that there would be futures trading in gilts, because I was one of the two people in the gilt department, two graduate trainees. There was an offer for one of those graduate trainees to go and work on the floor of the new futures exchange, which I seized very keenly on the basis that there would be more opportunity in something new for a young person, for a young man that the opportunities would be greater.

KD: Did it turn out like that?

DH: Well, it did. In the long run it definitely did. In the short run it was quite an amazing experience, the start of the futures exchange, and the colored jackets, and so on and so forth, the shouting—I tend to say "camaraderie," but that would imply that I was part of it, and I definitely wasn't. I was just a young geeky student hovering around the edge of all the big boys doing all their stuff.

KD: A lot of machismo.

DH: Yes, a lot of machismo. They called me Spike because I still had short spiky hair from my punk days. I drew lots of charts and graphs and kept neat folders with lots of charts and graphs in so I continued to be the sort of good student. And I could just about hold my own in that environment, but I wasn't a trader. I was just a sort of messenger boy. Being a trader would have been rather glamorous. That would have been above my pay grade.

But, again, I had a good strong education, and at that point I taught myself all of the mathematics of futures from textbooks during that year, as well as reading the literature of technical analysis, which is not rigorous knowledge at all. It's like a sort of taxonomy of market movements or something like that. It's not rigorous scientific, but I had the ability to learn all the bond math and so on and so forth, a lot of financial mathematics at

that stage. Because they didn't give me anything else to do all day so I just sat there all day and studied. So, I did teach myself quite a lot, and by going on training courses.

KD: What was the next step after that?

DH: The problem with the gilt market, from my point of view, is there was only one of it. That was the problem. A quiet day is a quiet day. Nothing's happening on a quiet day. And my boss was an alcoholic and he didn't pay attention to me at all, and I wasn't doing any business. I was just impatient so I started looking around to see whether or not there was something else I could do and I got interviewed by a commodity broker. The appeal to me of a commodity broker is they traded in lots of different markets, so I could study the charts not of one market, but of lots of different markets.

This is what I recollect. I don't know how much of this is made up or not, but I think if something's not happening in the gilt market I felt it might be happening in the currency market or in the live pig market or something like that, so there was definitely a move from focusing on one market to focusing on a larger group of markets.

I got a job in what I know, with a bit of hindsight, was a sort of dying commodity broker. This was after the seventies and commodity brokering had been easy money in the seventies. Obviously when I joined there I didn't know it was dying, but the person who had been given the job of sort of rescuing it, his strategy was to bring in some very, very young bright people and give them their head, and I was one of the young bright people

he brought in and gave me my head. He gave me a small amount of money in backing to try various business ideas and currency options and stock index futures.

KD: What company was this?

DH: Johnson Matthey & Wallace. At Cambridge I had run a punt business. I had run various businesses actually, small businesses. I had run a business taking tourists on punts and giving them cream teas at Cambridge, for example. I had also run a nightclub at Cambridge, so I had always been very entrepreneurial.

This guy had obviously spotted that, and he gave me the opportunity to be entrepreneurial at twenty-two in the City, in this brand new futures business, so we pursued various entrepreneurial plans. Another thing I had done was selling newspapers in the evening, at university, and then money dialing for dollars. So I phoned up every stockbroker in the country, which is quite funny because stockbroking is quite a stuffy profession in England and I'm a young man here saying, "My name's David Harding. I work for a company called Johnson Matthey & Wallace. I'd like to spend a few minutes of your time to discuss the benefits of stock index futures," or something, to a sixty-nine-year-old stockbroker from Harrogate or something. I got a lot of no's basically.

After a couple of months of phoning every stockbroker in the country, I got one client who did one transaction for $30 or something. Everything I did continued to be unsuccessful in the out turn, but I threw myself into it. And then the chap who had hired

me hired a couple of other similar such people who also were sort of trying to run new businesses and so on. The commodity brokerage carried on dying, but it didn't die gradually. It died instantly one day when they went bankrupt because of a giant fraud. It wasn't even the brokerage that went bankrupt. The parent, Johnson Matthey Bank, one of the five gold fixers of London, went bankrupt as of a result of lending too much money to some kind of Nigerian tycoons or something like that. It was nationalized overnight and I arrived in Edinburgh on a business trip to an enigmatic note saying the bank has been nationalized. This was three years into Margaret Thatcher.

KD: (Laughter.)

DH: One of the many business ideas I had been pursuing, these entrepreneurial things, currency options, selling stocking next futures, had been the idea of a managed money unit. They had a sort of small managed money unit and they'd engaged me with that, and I'd had conversations. And I had been introduced to some other young men who worked in another managed money business in London, making money and futures called Brockham Securities, and they were my contemporaries. They were the same age as me. They were physicists. So I had met them—there were two—and there was another managed money company, so I had been sort of involved in managed money there. And, on the day the bank was nationalized, one of those companies, Sabre Fund Management, phoned up and offered me a job, headhunted me straight away more or less the same day. It was a matter of "come and see us," you know.

KD: That was Robin Edwards?

DH: Yes, Robin Edwards, exactly, and that worked very well. That was immediately appealing because he made money trading the markets essentially as an outsider. That's the way I saw it. I fancied the idea in the long run of being able to make money from outside the markets. That was the plan. I'm not the only one who had that idea, because over the years I've come across people who have pursued that sort of slightly solipsistic... There was a guy called Klaus Hepper, who used to sail around the world on his yacht at some point in time, and there's been some other crazy guys who usually the positivity got the better of them I think in the end. But I fancied being able to make money from outside the market.

KD: Didn't want to be in the establishment I guess, wear a bowler hat and go downtown.

DH: No, I didn't. I wanted to be a radical. Now it seems not really that wild. Lots of people have done things like this. With the benefit of thirty years later, most people have actually been more successful by not being part of the establishment than by being part of the establishment. I have a friend who went to Australia and he had to choose selling mainframe computers or importing radical dance records or something like that. In the end, he went for selling mainframe computers. It was bust within two years, IBM's mainframe business was. If he had start with the other thing, he'd probably have been Australia's leading impresario.

KD: So what did you learn at Sabre?

DH: We drew 200 charts every day, so we drew at least maybe 200 to 400 charts by hand every day, and we cataloged hundreds and hundreds of pages of chart patterns according to a very highly evolved, almost craft-based approach to the study of markets which Robin Edwards, I think in turn, partly learned from. He had a teacher or intern; he was an accountant who had really developed this very rigorous, disciplined, not highly intellectual—again more taxonomical approach—to the study of markets. I found the experience of working there somewhat frustrating. Interesting in terms of empirical study of data and markets and how they work, and I certainly got a lot of ideas. For example, he would fill in a checklist before entering a trade, a thirteen-point checklist. You may or may not have seen, in the last four or five years somebody wrote a book called *The Checklist Manifesto* that claims 30 percent of all accidents can be avoided by checklists. He made the checklist out to seem to be—apparently it's a big thing in hospitals now.

KD: It sure is.

DH: So it's funny that Robin had the checklist. I'm still friends with him now; I see a lot of him now. He is a rather obsessive sort of character, and not highly intellectual, very accountancy-based, but his checklist was very sensible. You had to tick short-term trend, medium-term trend, long-term trend, pattern, seasonal, fundamentals, cumulative volume.

He had some technical indicators on there, so you had to go through this checklist and decide. It was discipline for deciding how to trade or not.

I watched him trading, and mostly I remember plotting the charts of markets every day and really getting a very strong feeling that they trended. They're not supposed to according to the efficient market theory, but when you sort of plot the thing going up every day, you're saying, "I bet that goes up again tomorrow." When you plot something by hand it's all very well claiming that there's a chart on the screen, it's random, it looks likes random noise, but when you plot it by hand every day I think that aspect of empirically interacting with the data had quite a big impact on me.

I remained in contact with these other young men, these other physicists who ran this other money management company and after about a year we started talking about creating a joint venture between the two companies where we would take Robin Edwards' method, if you like, and then test that with computer systems they'd developed and turn it into a computer trading system. We would marry the two ideas and there was negotiation between the two companies. Their company was called Brockham Securities, it was owned and run by Michael Adam's father, who had came from a Mauritian family that had been involved in selling the Mauritian sugar crop in the London markets for 100 years or something like that. So they had a breaking franchise in London due to the Mauritian sugar brokering and the sugar futures.

KD: There's always commodities back there somewhere.

DH: Exactly.

KD: You went into Brockham Securities with the other two companies?

DH: Well eventually, after two years they approached me and said something as to joint-to-joint venture. The older generation weren't getting anywhere; his father and the bosses at Sabre couldn't on agree anything between themselves. So Michael Adam approached me and said, "Why don't you join my family company? I don't own it yet, but when my father hands it onto me, which he's going to soon, I will give you one-third of it." He and his best friend, Marty Lueck, we will have a third, a third, a third. It was an idealistic offer; he was being idealistic. He was very young, again, and I think most of all he wanted to be free of his father, really, so I think perhaps there was some element of, maybe, by taking me on that would sort of hasten the father's decision.

KD: Did you start in with a plan, did the three of you figure out this is what we want to do?

DH: The idea was to computerize, to test and automate Robin Edwards' ideas so as to move forward there. They had a trading system already, which had been sort of passed down in the family almost, a sort of family trading system, the guts of which were: "buy when the market goes through its highest high frame days, and sell when it goes through the lowest low frame days." So it was a rule-based trading system which they operated. They obviously believed that there was some expertise I might be able to bring to bear.

KD: What kind of computers were you using at this point, were they still mainframes?

DH: No, it was personal computers. Mike had started in 1979 using a North Star personal computer, and I think at that stage we were using Hewlett-Packard. I'm sure we were using Hewlett-Packard personal computers in the operating system, which was Pascal. I had noticed a very close similarity between where the buys and sells took place on their computerized trading system, which used this very simple family rule and Robin Edwards's highly evolved method using chart patterns. They bought and sold in the same sort of places. Signals were similar, which was remarkable because it showed you that a very complex process could be partially replicated by a very simple algorithm. I remember being very struck by that.

KD: Putting those two together, was that the core of AHL, then?

DH: The program was based in Wimbledon, so I used to drive down to Wimbledon every day in my sports car and then drive home in the evening, which is funny because you're driving out of London. It's a reverse commute to the middle of the countryside.

KD: It's a good thing to do.

DH: Yes, I needed it for about two months. Then the father and son had a huge argument as a result of severe losses incurred in the cotton market. They had a huge argument about

how the father wanted to pay back the losses and the son didn't want to pay back the losses. The father was very, very gentlemanly in a sense, but the son wanted to leave the losses to the investors that invested. I think most of the investors were friends of the family almost, so the father wanted to compensate. Compensating the losses would really have made a mockery of the company's existence as a company, I think, really. So there was an enormous row and Michael Adam walked out of his family's company and I was left in the lurch.

But I took advantage of the opportunity to persuade Michael Adam and Marty Lueck that we should stay together as a team and market ourselves as a team, by this time I was reasonably experienced at getting jobs so I persuaded them that we should market ourselves as a team. I already had a decent income because I was already writing two tip sheets in the City at that stage. I had enough income, I could survive without a job, actually, because I had starting this tip-sheet-writing enterprising in my various companies, at Sabre.

Then we started marketing ourselves as a team. The computer software they had was terrifically impressive, much more impressive than stuff that the City institutions had. I think my hope was that in the act of marketing ourselves as a team we would get some business deal for the continuation of the business, which had been brought to such a sudden and untimely end, and that's exactly what happened.

So I started marketing the team, and my contacts in the City, commodity brokers, who I was writing tip sheets for and so on, responded very positively. It was a good presentation and I was a good enough salesman. The product was good. The software they developed was good. I was showing off. I was able to do a sort of thing of showing off their software.

But the real thing that got it all going very quickly was that the company's old clients—the company had been shut down—its old clients had in turn been building their businesses on the back of this business, and they wanted to keep going. So, rather than being put off by Brockham being shut down and three wet-behind-the-ears young men starting, they wanted to cooperate, to help us to continue, to keep us alive. They got themselves somewhat committed, two or three clients, so in this very short space of time, rather than trying to get clients we found that clients were trying to help us stay alive and keep going.

Within no time at all, I found myself in a very good position with a lot of revenue, money being put under our management, which paid management fees. Management fees were 6 percent a year, and the money started coming in rapidly. Then on top of all that, the performance was very good. In the first half of 1987, there was a very big bull market in silver and so we were up to 50 percent in six months or something. So the money was pouring in and within six months we were very, very profitable, and so we started hiring staff and getting offices. I think in 1987 or 1988, we moved offices six times because we just kept hiring more people. It was all very exciting.

KD: Tell me about the division of labor between the three of you at AHL. Did you each have your strong suit and you divided things up that way?

DH: Mike and Marty wrote the programs for testing trading systems and did the testing of the trading systems at the very early stage, whereas I sort of told them what to test, if you like, and sold the product. For a period of the first eighteen months, I was probably indisputably the managing director of the whole thing. I remember them giving me a mobile phone as a present, and I had a huge office and they brought in a mobile phone like this. I sat behind my desk. I was indisputably in charge for a period of time.

But Mike Adam came from a business family and he was interested in business. He had formidable capabilities. And it was his family business and he wasn’t interested at all in either ultimately playing second fiddle or in testing my trading ideas using his trading systems. Just one way or another, before the second year was out, there was competition between us and a degree of friction and Marty was the glue. Marty was Mike Adam's university friend, his best friend. The conceit was that Mike and me were both tempestuous geniuses and Marty was steady and acted as the glue in holding things together.

But that does explain why, when Man approached us and offered to buy 51 percent after two and a half years, they're pushing on an open door because things had already become very, very argumentative by that stage. It wasn’t as though the three of us were united at

all, so the idea of another party owning 51 percent was not really that unattractive. In fact, business was very good to start with, but it went through some difficult bits and it easily could have been that we could have walked out of that whole very exciting experience with almost nothing after two or three years if we'd blown apart. It happens quite often, doesn't it? We were offered real money for 51 percent, a million pounds I think or something like that. By the time the ink was dry on that, I was going to have a quarter of a million pounds, which was a quarter of a million pounds more than nothing, which is what I'd had all my life.

KD: What did Man do when they came in, what was their effect on the company?

DH: Man had a partnership with a company called Mint, which they owned 50 percent of, which already had a billion dollars under management and was a CTA that had been founded by three people, Larry Hite, Michael Delman, and Peter Matthews, and it was probably earning let us say 100 million pounds a year, $150 million a year. Man had that in 1989, and it was a deadlocked company, 50/50. So in buying 51 percent, they obviously took a look at AHL, and it looked a bit like Mint, a partnership with three people, in some ways preferable, younger, more techie, actually. They rectified the mistake they made with Mint, as they perceived it, by buying 51 percent. They bought 51 percent, obviously with a view of eventually corporatizing, I think I even heard the words, but the idea was definitely to eventually corporatize AHL, and quite gently they set about doing that, I think.

One of the things they did was to focus very much on tax, and to that end they set up a company in Switzerland, or they worked with us to set up a company in Switzerland, so as to offshore the operation into Switzerland, the money-earning operation, and that meant several people were taken off to Switzerland, including Michael Adam. The research company was split away from the fund manager company, and I was left with running the research company, which is exactly what I wanted to do. I wanted to use computers to research and test trading systems thinking, in my view correctly, that if you are good at that in the end some money's going to find itself your way. And I had done enough research in that field to feel that it was a productive line of inquiry.

KD: So this must have been a pretty good deal then. You end up getting to do the research, which is what you wanted to do.

DH: Yes and Mike Adam was taken off to Switzerland. Then I was in sole charge so I was now master of my dominion in London and Michael Adam was running the business in Switzerland.

KD: But nonetheless, you ended up taking off a few years anyway, once Man started increasing its purchase.

DH: Well, that ran on for a period of time but the schism between me and Mike Adam continued within the Man Group. Sometimes we were on the same side against Man and sometimes we were against each other. The Man Group wasn’t united itself. Man's aim

was to corporatize AHL, so the split between me and Michael Adam was a sensible one for them to exploit to some extent, so they played a little bit on that. It was a rather tormented period of time actually, those few years, but set against the fact that the performance did quite good, and Man had a very successful money raising machine and they did succeed in raising money and the profits did start to pour in. The money was pouring in; we were very successful.

KD: So you were going along very successfully, although there's obvious schisms.

DH: Well tension, yes, but the company was growing, and there were board meetings every month in Switzerland so we'd all fly out and back once a month for a board meeting in Switzerland. The research company was continuing to grow.

KD: By '94 Man had bought a much larger percentage.

DH: By Boxing Day 1993, the relations between me and Mike Adam had become very poor indeed, unfortunately. It really had developed into two camps, my camp and Mike's camp, and there was not quite open warfare but almost open warfare. Unbeknownst to us, Man was hatching plans to go public and consequently in the middle of this warfare, as we were appealing for arbitration from our parent Man in our sort of warfare, they approached us and they said, "Well, why don't we buy out the minority? Why don't we buy out the half that you own, because, confidentially"—they had a problem at this stage—"confidentially, we're going to go public."

From the benefit of hindsight I can see, and I have no bad feelings about this, that what they were able to do was: AHL's earnings constituted a significant part of their going public story, because our earnings had been growing rapidly, so they needed those earnings to be well behaved and stay in place. So the deal was: we'll buy you and you'll go public, and they offered us $30 million, I think, or something like that, thirty million or $40 million to buy our 49 percent. So I'm slightly ashamed at the whole thing but now, I said in 1989 they offered 250,000, and now they offered me $10 million, which, "Whoa, how does $10 million sound?" (Laughter.) Well, I was thirty. It was like, "Whoa, I'm really committed to my parent company but $10 million sounds really good." Also, it was going to bring an end to, again, this rather tormented period. And Michael Adam and I were both promised separate things. Michael Adam would have a future career in the Man Group, and I would get to run a division of Man focusing on research, and so we accepted. We had no trouble agreeing to sell shares, so Man acquired AHL totally then. Then Mike felt he'd been let down after Man went public in October 1994 and left.

I created this division of the Man Group called Man Quantitative Research, with the backing of Harvey McGrath and a few executives. But when I say I created it, in a corporate sense it only came into being in a ghostly fashion. My understanding was that it would have revenue and make profits and then report them to divisional headquarters as a division of the group, whereas their idea was a more shadowy notion of a division, more that it would sort of exist and be on someone's budget somewhere. So this battle went on for a while, with me trying to make it a real division and then trying to, I would

say, wriggle out of the commitment to make it a real division, but that's not what they would say at all. They would say they tried to help me to come to terms with the fact that my company had been fully acquired. (Laughter.)

KD: It's a very different perspective.

DH: But I fought that fight. I think I behaved reasonably faithfully as an executive of the Man Group until such time that it became apparent to me that there was no real agreement to create a division. But actually, I left, I think they forced me to resign

KD: In '96 you left.

DH: Must have been August '96.

KD: Ninety-four is an interesting year because that was the year that Man essentially bought AHL out. You also wrote this Royal Society paper which is a manifesto of sorts. I wonder if you can tell me what the origin of that was. It seems an unusual thing for somebody to do in your career.

DH: In the late '80s, through an advert in *The Economist*, a gentleman called Paul Wilmott had applied to work as a consultant at AHL. He was a mathematician and I got him interested in finance and financial mathematics and the ability to apply his skills in financial mathematicians, and he got more and more interested and he started teaching

courses. Then he got this Royal Society scholarship and he organized this symposium and he asked me to speak at this symposium.

To me, it was a great honor to be asked to speak at the Royal Society, so I took a month or two months off to work out what I was going to say. What I couldn't do was present the results that we had on which our trading system was based, because I couldn't give away the really interesting stuff. So I had a very difficult challenge - which was to speak in a very exalted setting to a large group of world-famous mathematicians without giving away empirical data. Well, that's what I thought. History might be different if I had given away the empirical data because the audience included Miller and Merton, Scholes, and so on and so forth, who were rather mocking of my speech, or at least Miller was. I could at that day have given a definitive disproof of the efficient market theory, which then went on to form the basis of the risk management that went on to form the basis of the risk control in the banking system and the basis of the boom in the global derivatives business and the CDA business, which ended up destroying the whole economy. But that was above my pay grade and I was trying to deal with what I perceived as the honor of speaking to the Royal Society. I had in the back of my mind the knowledge that we had done lots of research into markets which showed that efficient market theory was wrong, that Brownian motion was not a good estimate.

KD: I do think there was a swipe or two at the efficient market theory.

DH: Oh, it was a full-on attack. And the conclusion I said, "There are different things you can do with financial mathematics. One has the intellectual integrity of selling vegetables, that is you can manufacture derivatives, which means manufacture core options and so on, Asian knock-outs, strike options and sell them at high prices. You can make a lot of money selling vegetables by buying some vegetables, marking the prices up and selling them, so you could buy spoiled vegetables and sell them as good." And that's what the banks did for the next fifteen years, is they bought spoiled vegetables and sold them to Arabs for extortionate prices, and utilities in Italy, or utilities in Orange County and municipalities in Italy and so on.

KD: Risk, spoiled vegetables, one and the same I guess.

DH: My point is that you can use financial mathematics to value instruments based on this theory and then sell them for a markup. You can use it for that, so you're not studying the underlying reality. You're just creating a model and then selling something for twice the value of the model, so, as I saw it, it has no intellectual integrity. You're not interested in whether the model is right, you're not interested in the way in which the model relates to the underlying reality; you're just interested in using the model to work out an approximate price of something and then sell it for twice that price. It's a merchandising operation. It was very clear to me then. That was the basis of my whole talk. It was very clear to me, and to be honest it's been immensely prescient of what happened in the next twenty years.

It attracted no interest at the time, and after that talk Paul Wilmott, who went on to write a magazine called *Wilmott* magazine, which is the world magazine for quants in finance. It's the quant finance magazine; he is the high priest of quants. He really became an arch proponent of the efficient market theory, an arch proponent. We went on with our thing, but our thing was a very, very narrow sideline. Nearly all the quants believe in efficient market theory, and use it to calculate the value of derivatives and do all this mathematics involving partial differential equations. The empiricists, which is what I'd say we were, would study the data and model how markets actually work by studying data, by bringing an empirical approach to bear, which is reminiscent of the natural sciences. Those people remained in a tiny minority, a very small and derided minority, a disrespected and derided minority.

KD: But you went on and set up Winton a few years later.

DH: Yes, when I was finally kicked out of Man I set up Winton.

KD: And so you're committed to this thing that’s in the minority at this point.

DH: I wasn’t that committed. I was more or less a broken man at that stage, I would say. I wouldn’t say I was that committed. All I would say that I was committed to was the fact that at that point it was just very easy. Because I had a very deep understanding of the ideas involved in running trend following trading systems. It was very easy for me to set

up. As a matter of fact, we set it all up using spreadsheets. We didn't have any sophisticated computers, we had no computer languages.

KD: At Winton?

DH: Yes. In fact, we didn't employ any programmers at all. One of my old friends who has no training of any sort wrote all the systems and everything on a single spreadsheet, and we were able to run a CTA just on a spreadsheet program in Excel with three people. That spreadsheet continued in operations the next nine or ten years. (Laughter.) I'm really letting the secrets out of the bag here. Maybe more than ten years, but yes, nine or ten years, but I was able to run that very easily and didn't indeed have to work. I didn't really work. I wasn't really working. There wasn't much to do really. We were creating a track record, or the company was creating a track record. I was a single dad at that time so a lot of what I did was looking after my son.

KD: So the futures business is going on a spreadsheet. Is there pretty consistent growth over this time? I mean, you have the dot-com bubble in there and some other things happened.

DH: Taking a distant perspective, the trend following systems, which we developed in the 1980s, have just continued working. They didn't work smoothly, but they continued to make money, so some level of success—providing you were not over-leveraged and you stuck to it—some level of success was eventually guaranteed, wasn't it? Because if you keep making money, in the end the world's going to find you. It's not very quick, because

it's not very smooth, it's not this high short ratio thing; its virtue is in trends forming in very high capacity. That’s its great virtue, because if you put a lot of money in it, it's a very profound thing. It's much more profound than many hedge fund strategies because it's talking about the very exploitable effect in the price movements of whole asset classes. People talk about anomalies; it's not like some small anomaly. It's about the whole way the whole world works. It's a theory about the way the world works, which is different from the theory that everybody in the financial world has about how the world works.

The financial world I count as an institution of investment managers, investment bankers, finance professors, and consultants. Let's say that in the system there's investment bankers, institutional investment managers, finance professors and consultants, and perhaps chuck CFAs into that. Institutionally these are the people that are in charge of the world's money and they believe in theory A, and we had theory B, which is different from theory A in a way that is testable. It's testable because you can bet against the two sides.

KD: Who were the people that were coming to you and were going with the trend following? Was there some common denominator there?

DH: There was an industry mainly derived from the commodity brokering industry, speculative, but you said it's always commodities. So in America it would have been Shearson, E.F. Hutton, Commodities Corp., Merrill, Thomson McKinnon, there's a list of

long forgotten names, but I mean the American commodity brokers, and there were British commodity brokers as well, Man Group. So that's where the business came from for us was from commodity brokering companies.

KD: You started to get institutions coming in in the early 2000s somewhere.

DH: Yes, from the late 1990s onwards. The term hedge fund was invented and then you started hearing about hedge funds, and in general the hedge fund world didn't accept that commodity traders were hedge funds. When I say in general, there were exceptions and as the hedge fund industry began to boom there began to be some spillover benefit for the commodity trading advisors, because since they shared a property with hedge funds, and they go short on markets and they use leverage… and indeed, there's very little difference between macro hedge funds and CTAs. There's very little difference except that macro hedge funds come from the securities business and CTAs come from the commodities business. The commodities business was never respectable. It was never Ivy League or public school England. The securities business is respectable. The best and the brightest from Wharton and Harvard and Oxford and Cambridge went into the securities business and not into the commodities business, which was always a much rougher place.

KD: But as the hedge funds took off, you're suggesting there was a collateral effect.

DH: Yes, we were carried along to some extent, not as much you think would have been warranted, because in a way we were a hedge fund, we had been around for a fifteen-year track record.

KD: These are mostly long/short hedge funds, right?

DH: Yes. It's a mixture, because as I say the big global macro hedge funds also basically dated back to commodity brokering, but Moore, Louis Bacon and Paul Tudor Jones, and Caxton, Bruce Kovner, all come from commodity banking backgrounds so those were big hedge funds. So there was a hedge fund segment that went back to the days of commodity brokering, but at this stage, by early 2000 you were starting to see a massive amount of securities hedge funds starting. That's when BlueCrest and Lansdowne and Brevan Howard appeared over here, and then in America a whole raft of others.

KD: Other developments in the 2000s, did business continue building on this sort of hedge fund—

DH: Well the hedge funds boomed strongly in the early 2000s because of the bear market, so the securities industry needed something to sell that didn't require stocks to go up so it sold hedge funds. So the hedge fund business boomed, bringing collateral benefit to the CTAs, and then there was a bull market starting in 2003, and by that stage the hedge funds were really flying so we entered into hedge fund heaven, really, from 2003 to 2007. Now the CTAs were really being blown along by the growth of the hedge fund industry

so there was quite a lot of crossover. There was still a large segment of the hedge fund business that wouldn't invest in CTAs, about half would and about half wouldn't. For example, endowments didn't invest in CTAs at all, and pension funds mainly didn't, but endowments in particular didn't. The Yale endowment model wouldn't permit CTAs. The Chicago guys, Grosvenor, or Harris, Mesirow, never would have invested in the CTAs.

It was a philosophical question whether you invest in CTAs or not. It's about whether you believe in efficient market theory. If you believe in efficient market theory, you don't invest in CTAs. But obviously hedge funds decided to enter a bit predicated on markets not being technically efficient, and also CTAs had made money in 2001, 2002, so they always looked good when you combined them in optimizers into people's track records and so on. And they had a long history, so they were neither in nor out. They were half in. They were the ugly stepsister, that's what I describe them as, the ugly stepsister of the hedge fund industry, the ugly rich stepsister.

KD: (Laughter.) Did you make any public relations efforts to get beyond that and to sell CTAs?

DH: I did, I became very open. Of course Winton was relatively unsuccessful in the early 2000s. I actually went in when it was relatively unsuccessful. It became quite successful as a company, but several of our competitors, like Aspect, became much, much bigger and more successful because they had much more successful institutional sales, so I

decided I might as well be hung as a sheep for a sheep is a lamb. And I started showing all the results that I hadn't shown in 1993, so I started showing "this how it works." Excuse me, but fuck it, this is my work. If I can't make money, I'll just show you it.

KD: You'd go on road shows and show potential clients?

DH: Yes. That started to be successful because I'm a good presenter. Behind you, on the wall, that's my chart, the signing system chart ratio. When I explain and show people that, that's what I did when we started AHL, and when I explain and show people that then that has quite a lot of impact. And so I started to become better known, I think, certainly in CTA and hedge fund sales, started to develop a bit of a reputation as a good speaker and started to change a few minds and so on. Our performance was good at that time, because of course in the 2000s bloody commodities started making out like they had in the '70s, something you thought would never happen. I never could have dreamed of these ghastly dull commodity markets coming back to life, and they burst back to life, so much so that now everything thinks that they are, you know, people go from one extreme to the other. Now they think commodities are terribly exciting rather than terminally dull, which they were for the previous twenty years.

KD: You talked about hedge fund heaven and coming down in 2007. Tell me a little bit about that experience for Winton.

DH: Well Winton just took off around about that time. By 2004, 2005, 2006, the groundwork had been laid. We had a long track record, money was pouring into the hedge fund industry; CTAs were becoming reluctantly accepted by at least half the hedge fund community as the ugly stepsister. Winton had a good seven or eight year track record, the track record showed compound growth of 19 percent. It was uncorrelated to other hedge funds in the stock market, you know, everything was absolutely right and the money poured in and continued to pour in. We had forty-eight months in a row of raising more than fifty million in new assets. Each month one looks and sees whether one raised money that month.

For large parts of my career, we hadn't raised any money. I would get a phone call at home if we raised $100,000 or something like that, so the norm became money pouring in, and not only the money pouring in, the performance was very good as well and we started to make huge sums of money. Before, I had been wondering whether we could afford to have a second researcher in 2001 or 2002, or could we afford a third researcher and this sort of thing, and sometime in 2005 lack of money ceased to be the restraint behind the expansion of the company. It was no longer lack of money. Suddenly, lack of money wasn't the issue. There may be all sorts of other issues but it was absolutely nothing to do with money, so the resources were almost infinite quite suddenly in about 2005.

So this was all booming, all booming, all booming, and hedge funds were starting to sell stakes out, so we thought gosh, why don't we try and see if we can sell a stake, because

you kept reading in the paper each day that someone would sell for some vast amount. In investment banks, we were speaking to Lehman, and Lehman said we could sell a stake, and they started marketing us and so on. Then Goldman got in and said they could do a better job, so we switched from Lehman to Goldman, and Goldman tried to sell a stake in Winton. And then, because they couldn't actually sell a stake, they said, "Well, we'll buy it ourselves." So they offered it to buy it themselves, so they took a 10 percent stake in Winton in August 2007, a week before the quant quake of which Goldman was at the epicenter. Goldman Global Alpha blew up and that was the worst thing to happen to Goldman since 1994. They had a real disaster which their PR machine managed to do an incredibly good job, I think to this, day of getting out of it. It was a real disaster for Goldman and for many other firms as well. But, clearly, the final purchase of 10 percent by the Petershill Fund in Winton was concluded six days before that. Six days later that would never have concluded.

So we got our forty-four million quid for a 10 percent stake I think, something like that. I'm running you through the money aspect of this all the way along. I know it's a bit vulgar, but again, that was another big payday, and there was a 10 percent tax back then on capital gains. So that was one of the attractions to me, certainly, was that there was only 10 percent tax, whereas income is sort of 50 percent tax. It's much more difficult for U.K. hedge funds to shelter money from the tax man than it is in the United States hedge funds for a variety of reasons, or at least Winton has chosen not to do so. We have chosen not to use very, very complicated arrangements. But I often get grilled by American fund investors because they say, "Why haven't you got more money in your

hedge funds?" and so on. A lot of the American money chaps have in their hedge funds is because they can roll their performance fees up into shares without paying tax and this sort of thing.

The quant quake took place in 2007 and we now know that that was the canary in the coal mine, because in fact August 7, 2007 was the day in which Bear Stearns suspended its CDO hedge funds. The quant quake was caused, supposedly, partly by knock-on effects of credit spreads beginning to balloon. With the benefit of hindsight, it's easy to be wise, isn't it? But in fact that week is the week that will be dated to be the start of the credit crunch. The U.S. stock market didn't end as high until October or November that year, and emerging markets went very considerably higher. So, again, people I think probably forget the order of things in the sense that things didn't go down before August at all maybe in some models, hitting highest some time further than that.

But anyway, we made a lot of money in 2007, and then in 2008 the markets were starting to turn downwards, gradually the worries started to accumulate and build as 2008 unfolded and by early in that year we had accumulated large short positions in the stock market because the market had spent the year gradually turning over. Then what happened during that year, eventually, is by the autumn, when our climactic crash came, we were massively short, which again in the benefit of history looks quite smart, doesn't it?

KD: Right, your trading programs, or whatever you call them, they had been able to track these pretty well, I mean the changes in direction were very clear.

DH: Yes, just following trends really. The trends changed slowly. The trends in the market, the slide in 2008, didn't come out of the blue. It was a true bear market, a classic bear market, the kind of bear market that creates the need for the term bear market.

KD: Had you computerized by that time, were you off the spreadsheets by this point?

DH: A spreadsheet is a computer. This spreadsheet was just living somewhere inside a whole set of other computer programs. There's probably a spreadsheet in NASA somewhere, one that was written in 1959 that's still living in there somewhere. It's just become part of a bigger thing.

During that crash obviously, we made a lot more money and that crash, the significance of that for the CTA business, is that it meant that the 50 percent of people who didn't invest in CTAs decided they'd been wrong. (Laughter.)

KD: Tell me about the discussions you had with people who wanted to come in. Is that what they said, they said, "Oh, I've been wrong all this time?"

DH: They started coming in a year or two later. They couldn't come in straight after. You can't admit you've been wrong the next day, but, fortuitously for them, in a way we were

down in 2009. So we were up a lot in 2008, then we were down in 2009, and so from that perspective they thought, "Oh, I'll buy an opportunity," having not even admitted to having been wrong in the past, and then you can buy in a couple of years later. In that year we made a fortune in the markets, but had a lot of assets withdrawn because the hedge funds were melting down so we went from sixteen to eleven billion I think. That was obviously a time at which the assets shrunk a lot. But since then, we then grew up from eleven to thirty or something, and then next, as I said we had forty-eight winning months in a row, forty-eight months collecting lots of money in a row up to whatever, August, September 2008, then lost a third of the money in a couple of months, but then we embarked on another sort of four-year spurt of raising even more money, and that's when we went up to thirty billion or something like that.

KD: You've got a lot of new customers that came in after.

DH: Much more institutional. That's the period which was really conspicuously institutional, big institutions, pension funds, endowments, investing hundreds of millions in a clip.

KD: The institutions are doing a lot more business; they've got bigger pocketbooks. Were they able to challenge you on prices or anything like that?

DH: Not really because we were always one and twenty. One and twenty was our core pricing. We did a lot of distribution bid deals with people. In most countries, we do a deal with a local distributor, like Merrill Lynch in America, so the clients in America

were probably paying three and twenty, but that doesn't mean we're charging three and twenty. We're getting one and twenty and Merrill Lynch is charging two or something like that, or in Japan. We had started off at one and twenty in 1998 and we still broadly have a core pricing of one and twenty now. Core pricing was below the industry when we started in 1997 and it remains broadly unchanged fifteen years later, our core pricing. One and twenty is not very high.

KD: Did you ever consider coming up on par with the rest of the industry?

DH: Not really, because a lot of our clients pay more than one and twenty, because they pay other fees which are added on by other people in the distribution chain. If anything, I would say that our product is still more expensive than is optimal for clients, but the clients of the Winton Futures Fund, which is a $10 billion Cayman Islands fund, those clients pay one and twenty and nothing more.

KD: So during these years you're starting to bring in some new products as well, and I want to talk about where those came from. If you're so committed to the futures and the CTA, why do you start bringing in the Evolution and the Global Equity Funds?

DH: All of the new products are predicated around moving into equities, trading equities, which, like futures, are traded on exchanges, and the best way to describe it briefly is that we diversify into 100 exchange traded futures. We could do better if we could find more undiversified markets to diversify into. There are no more exchange traded futures that

we can diversify into, but there are 1,000 equity markets, so there's 1,000 exchange traded equity markets to diversify into.

As I said, my investment career started in equities. I have managed my own money in equities for many years and follow the equity markets very closely, and it seems the obvious way ahead to develop the business is to diversify into more markets with equities, you know, if there were another thousand futures markets then we'd diversify into them, but there aren't. Not all the equity markets are as deep, but Apple is a big and liquid market, or GE or Exxon, these are big markets which just provide some more opportunity to do things with computer trading systems.

KD: Did you have to reinvent the computer trading systems to work with these equities?

DH: Yes. The common feature of the two markets is the use of mathematics to make some sense of movements of prices. That's the common feature, not that we apply the trend fund end trading systems in futures in the same way to trend following in equity markets. It's not just a question of copying into another thousand markets. The trend fund trading system is an example of the use of mathematics for professional gambling on prices. It's not surprising that you would use mathematics in gambling, because statistics is about calculating the odds. It's what Warren Buffett calls handicapping. That's what he calls what he does, handicapping, which means setting the odds, so that's what an investor has to do, they have to work out what the odds are.

KD: Did you bring in staff at this point that had experience in the equities markets to build this out?

DH: Some. We brought in some people with equities experience, but mostly we are people who have experience in statistics and mathematical modeling, and then we let them learn about markets. We have a preference for people who have more advanced academic skills and then have them learning about finance than people who have advanced financial skills learning the necessary academic ones. That's our preferred way of doing it.

KD: Has it become easier to hire people like that?

DH: Yes, it's become much easier. For the first twenty years it was very difficult to attract, retain, and motivate the kind of people that I needed, because I have never done any computer programming myself, none whatsoever. I was so delighted to learn that Steve Jobs didn't, that amused me so much, because you have these people in your mind, these terrific tech guys. I don't suppose Jim Simons has either, to be honest. You don't have to be a computer programmer to run a highly technical operation. So yes, we need to hire very clever people who could do the programming because it's all about programming and using computers to test things. As I said to you, Mike Adam and Martin Lueck, they might have tested my ideas for about six months but they didn't want to do it after that.

KD: What are all these folks doing? Are they looking at the programs on a systematic basis and constantly upgrading? How do you strategize the ongoing development?

DH: What they're doing is not incomparable at all to what is done by financial academics, or behavioral economists, or even perhaps econometricians. If you look at the financial mathematics literature, I would say that in the financial mathematics literature there are five to ten leading journals, *Journal of Finance, Journal of Portfolio Mathematics, Journal of Forecasting, Journal of the Futures Markets*, and if you read what's in those journals then that's what our chaps do. But those journals are written by academics and those publications are disconnected from one another, the thoughts in all their journals. There's not one coherent project. What we're doing here is part of a coherent scientific project whose object is to forecast as well as we possibly can the returns, risks, covariance matrices, and transaction costs of the 1100 markets in our portfolio, and then taking that information and working out how to create an optimal portfolio and that's a big science project.

KD: That's huge, 1100 markets. Do you give, oh, here's twelve markets for you, and here's five markets for you?

DH: No, it's methodologically broken down to a considerable extent. Forecasting covariance is easy and forecasting return is hard, and forecasting transaction costs is easy. In other words, the reason I put it like that is that the volatility of the stock market is fairly predictable. It's about 12 percent. It might not be 12 percent in the next twenty days, but

I wouldn't be surprised if it was, and that's what I mean by easy. Whereas forecasting the return, who knows. Literally it could be anything. Say the S&P over the next twenty days could be anything. I'm not even going to bother with worrying about stock market crashes. It could be anything between minus fourteen and plus fourteen, any number in that range, whereas volatility broadly speaking could be between eleven and thirteen or ten and fourteen or something, so return is very, very uncertain.

KD: You've also got some special projects I read about. One of them is the nice book [*The Pit and the Pendulum*] that you created, which is a special project, but one of the things I read about is trying to figure out if the market performed worse when it rained in London or didn't. How much of that is part of the regular research project process?

DH: Something about rain, that's entirely statistical. A broad description of what we do is we look for explanatory variables, which means things that might explain what the market's going to do in the future and we research the conditional probability distribution conditioned on the explanatory variables, the thing that might tell you what's going to happen, and the conditional probability distribution is measuring whether something is likely to happen or not. Is the trend likely to continue or reverse, is it likely to go up or down in spring or summer, or before Christmas or after bank holidays? Are soy beans more likely to go up when the gap with corn is greater or less? Or if the hog-corn ratio exceeds this, does that make corn or hogs go up or down? Or is oil or natural gas at a normal spread? Are bonds and equities normally related to each other? Does the mean revert; a million, million, million perfectly sensible ideas, the correct way to study and

investigate which is through proper analysis of data, not just buying and putting your finger in the air and saying, “Oh, I feel such and such,” as most people do.

The other thing, the book, it's very important to realize that this is not a physical science, it's social science, albeit it's a bit of a wolf in sheep's clothing, because it's a social science which uses very rigorous and detailed mathematics. The thing about physical science is reality is what it is and it doesn’t change when you investigate it, whereas there are rules and laws that you're seeking to tease out, whereas there aren’t any rules or laws in financial markets. There are no immutable eternal truths at all. That's certainly nothing original I'm saying here. You can watch any presentation by James Simons and it's the first thing he says, so it is obvious, but I suppose it needs more than one person to say it.

A lot of the scientists and mathematicians who have gone into financial markets are not sophisticated enough to grasp fully this point. They sort of felt that there are physical laws. In fact, the efficient market theory is the idea of a physical law. The mainstream have fallen into precisely the trap that I'm saying there's no excuse for falling into. If you're going into business that’s the first thing you should try not to fall into, is believing that you're going into physics because you can use maths productively to improve your ability to make inferences, but it isn't physics. It's not.

KD: Talking about big picture, looking back, situate Winton and the legacy of AHL within the CTA industry. You talk about Jim Simons a lot. I just want to get a sense of how

influential AHL and Winton have been to the entire industry going along. You've seen growth.

DH: The industry is completely founded upon the group of people who created the AHL trading system. That's not quite the right way of putting it. All the biggest CTA firms, you can trace the critical intellectual property in those firms back to the founding of AHL. Until very recently, that's why they're all in Britain. Actually, it's not quite true because Transtrend is not at all included in that, nor is Lynx, for example. Lynx are the Swedes, Transtrend are Dutch, and none of the American firms are, so when I say the whole CTA industry all I'm saying is that this is a rare industry in which, at this particular moment in time, dubious privilege as it may be, the British are, if you count not necessarily even British people but the U.K.-based or founded CTAs, BlueTrend, Winton, Aspect, AHL, that's only four of the biggest five or six. Cantab has just joined in, haven't they, and there's another five or ten that people don't know about, Altis, and they're all started by my ex-colleagues or friends and everyone I've ever worked with has got into CTA now.

KD: Is that one of the reasons why you're sort of expanding into equities as well, in an attempt to broaden the base a little bit?

DH: Nothing's forever in financial markets. That's why I said there are no immutable laws. People like to say trend following will work forever. Well, I don't think anything will work forever. When too much money is put into something usually it works less well. I

think as fast as the industry is growing you'd expect it to work less well, and one of the ways to compensate for that is to diversify further.

KD: I want to wrap up just by talking a little bit about where Winton's going. We've talked about moving into equities. Where do you envision this company being ten years down the road, have you given that much thought?

DH: Not quite as a byproduct, but there's another product leading into equities. We see the possibility of applying this very similar type of mathematical knowledge to try and solve the problem of running a portfolio being long of a bunch of equities. There's a very popular way of doing that at the moment, which is called the index. We often call it the market, the S&P 500 for the sake of argument, and that is a trading system based upon being long of 500 stocks and drop-buying and selling them according to various criteria. That is a trading system.

We feel our experience of mathematics applied to markets can be used to do something better than that and that is a big business opportunity. To be honest, there's so much money in things like long-only in the S&P 500s, and if we were able to make one basis point more than that it would be worth millions, probably billions. If we could make let's say twenty basis points more than that then that is worth literally billions and billions and billions and billions, and that’s a highly soluble problem mathematically. The business problem of turning that into business is a separate thing, but the mathematical problem is highly soluble. I can see very, very, very clearly a way of creating an invention, which is

probably worth $10 billion or $20 billion in net present value. There's a somewhat separate task … which is to try and keep as much of that for me as possible.

KD: You're talking about sort of reinventing equities essentially, doing away with the indexes so to speak.

DH: I don't want to sound like I'm getting messianic. It's just a small invention. It's like improving the oil you use in cars. If you could make the oil you use in cars cost 5 percent less and last 10 percent longer you'd be in business, wouldn't you? If you could make windmill blades 2 percent more efficient, you'd be in business. It's a great business. My experience tells me that's how you make a good business and make money in the world today, is you incrementally improve something that is already well in use in the world's infrastructure. You don't come along and say, "I could do this differently."

Here we have a perfectly good thing, the S&P 500 index, evolves in response to the fact that people have identified that if you just minimize the transaction costs and invest in everything you do better than most of the fancy pants people who think that they're so clever. You can do better than that just by minimizing transaction costs and investing in everything. But to say that's the last word is incorrect. As I say, this efficient market theory which is used to justify that is an idea which is wrong because it's based upon the idea that this field is physics. It's not physics; it's a social science.

We have a business. I can see why other people can't do it. We have a skill, not nobody else has got, but we are highly skilled in a particular field which would enable us to produce something which could do a little bit better than the existing indices which have been such a big, popular thing. And so it's then a question of how you build a business out of that. That's attractive because that kind of income stream would have high PE ratio, it's revenue rather performance fees, it's management fees rather than performance fees, it would have a very high PE ratio, much higher PE ratio than our business has at the moment. And it's a diversified income stream so it's a second stream, to go with the hedge fund income stream. I can see why we have a competitive advantage. It's a modest thing to be good at.

Like I said, it's just making a turbine blade just a little bit more efficient. I'm sure we can achieve that, but investments always get oversold so the tendency will be to try to make it out to be better than that. Then it's quite difficult to know how, if you could do a little bit better, twenty basis points better, how to convert that into an income stream for yourself. We've got ten years to work that out. We're three years into that already and we're not nowhere; we've got a $300 million long-only business, we've got product, we've got market literature, we've got the infrastructure, we've got the research going on. The research takes years and years and years and years.

And what many, many people like to sell in this field is they like to sell a finished system. This is a complete fallacy. I think it's utterly foolish. If I'm going to manage someone's money for twenty years, what they want me to do is come to work for twenty years, not

buy something out of the back of a futures magazine. It's ridiculous. They want me and my team of people to work for them for that twenty years. The way we manage money in seventeen years' time won't be the way we're managing it now. It's not physics. It's not a physical problem.

KD: Right. You're talking about growing something organically here.

DH: Yes, and the trading system changes through time. It will change through time. There is no fixed system that will work from now to the end of eternity. The S&P 500 will not work from now till the end of eternity. It hasn't been working for the last fifteen years. You may have noticed. I'm not saying a better system would have gone up massively the last fifteen years. I'm just saying that the losses for the public have been exacerbated by the fact that they're investing in a system that has been widely gamed. In other words, that people buy stuff before it goes in and they sell it before it comes out so the investment manager is making lots of money out of the job.

KD: So the global equity then is sort of the overnight sensation in seven years down the road.

DH: Yes, exactly.

KD: All right, terrific. I think that's a good place to wrap up, unless there's anything that you wanted to discuss that we haven't covered.

DH: No, that's very good with me.

KD: All right, great. Thanks for your time.

DH: Thank you very much.

[End of Interview]