

***Interview with a regulatory consultant***

- SPEAKER1 00:08 So, the recording started, so first off, just to start, could you just give me some background as to your role, what you do and the types of firms you work with and that type of stuff?
- SPEAKER2 00:22 I am a qualified solicitor, certified fraud examiner. I've been involved in financial services compliance for twenty-seven years, former financial services regulator. Currently on the last nine years, I've been running my own compliance consulting firm, advising firms from small hedge funds through to global private banks, global banks, global custodians and international stock exchanges on financial services, regulation and practice.
- SPEAKER1 01:00 And in terms of what involvement, if any, have you had with investment firm sort of trading in the sort of the fixed by so fixed income currency, commodities, that type of space.
- SPEAKER2 01:16 Some clients who've been engaged in particular commodity trading, fixed income. Yes. It's not been a big part of the sectors I've been involved in, but they certainly deal with that. Yeah.
- SPEAKER1 01:30 And those types of clients that you've assisted, how would you describe their sort of goals? What are they actually trying to do in the markets?
- SPEAKER2 01:43 They're all regulated investment firms, either acting on behalf of corporate clients generally and sometimes acting on behalf of commercial clients to hedge their positions and so on.
- SPEAKER1 02:08 What, if any, algorithms have they deployed in their activities versus the sort of human trading activities?
- SPEAKER2 02:28 I have seen some firms using algorithmic trading for hedging functions. Not as necessarily a profit seeking approach, but to enable smaller trades going through to be to be routed through their own systems to enable rather than touching the market. So that's on one side. I've also acted on behalf of different stock exchanges of quite different ends of the spectrum. So, one was a European stock exchange. It's an interesting market. I can't say too much about it because obviously I don't want to disclose confidential, but they were very interested in understanding because they had a very limited understanding of how algorithmic trading was being used on their exchange. That was for the smaller exchange because they didn't understand how it was being used. And the advice I was giving them was about an actual fact. This is how your exchange is being abused on a literally daily basis. A large exchange was very sophisticated in terms of their its national stock exchange was very sophisticated in its understanding of algorithmic

trading. And they wanted someone to come in to train up their managers on the various ways in which this could be used in an abusive way.

- SPEAKER1 04:11 And those stock exchanges, I mean, they tried to delist any sort of sort of bonds or anything like those type of securities as well. Was it purely sort of equities? Both. OK. And have any of the sort of enterprises that you've worked with, to your knowledge, have any of them sort of used any sort of form of machine learning algorithms or artificial intelligence type algorithms or have they sort of maybe rules-based type?
- SPEAKER2 04:49 There haven't been any who I've actually given consulting advice to in terms of machine learning and so on. However, I do a substantial amount of training for new hedge funds, and those do, in fact, use both the sort of fixed rule-based trading to enable efficient transaction activity in the market and also seem to be experimenting with developing machine learning.
- SPEAKER1 05:24 And what is your impression of the quality of that sort of design and deployment and sort of collaboration, recalibration processes?
- SPEAKER2 05:36 I think it's nascent. I think they are all trying to work out where does this go? I don't necessarily think there's any really clever guiding hand behind it. I don't think they necessarily have thought through the consequences and everything that they are doing, which in itself, I believe is a potential risk area. It's one of those really immature parts of the financial services industry where the existential risks, as it were, had not really been bottomed out. Nobody's really understanding where these things are going. And in terms of. I can't hear you, Alex, if you're saying anything,
- SPEAKER1 06:44 Can you hear that it sounds like there's an almost like a hairdryer or something in the background?
- SPEAKER2 06:49 Yes, sorry about that. It's the washing machine.
- SPEAKER1 06:53 OK, so when we're talking about risk, I mean, have you sort of had any sort of input into the firm's sort of conduct risk programs?
- SPEAKER2 07:08 Advice I'd give them is normally when a very high level, and it is explaining about accountability, it is explaining about good faith. And I have also said that, you know, beyond the regulatory implications as the legal implications, because it's not just what the FCA say, there's potential that these matters could be there could be a complaints in terms of responsibility and accountability under, for example, agency law , for example, advice are being given in terms of conduct risk is in part explaining the complexity of actually grasping what it actually means, and particularly for the new entrants to the market. Their

hedge funds, who used to be various different executives in investment banks and other things like that, are going off to create their own hedge fund, explaining to them, look, this is a new world for you, where you've been kind of you now being immersed in this regulatory culture where you and you alone have to make decisions for yourself. And that's a big change for them in any event. And then on top of that, there is the complexity of the really sophisticated arrangements that they are that they're introducing, for example, in terms of things like HFT trading, algorithmic trading and so on. And to my mind, it is an extremely complex and difficult thing for them to grasp what which way they should be going, where the risks are for them. And I'm not entirely clear and I'm not entirely sure either. I would say that they are sufficiently mature to understand where that's going, I mean, mature in a regulatory sense.

SPEAKER1      09:13      Are they in your view , are they looking at conduct risk very much in the human sense about the human accountability for maybe supervision, oversight of trading and algorithms, or are they starting to think about it in the sense of maybe algorithms as almost like autonomous agents where, you know, maybe there may be a degree of accountability on their behalf and something which might be quite different from traditional human trading?

SPEAKER2      09:46      It's an interesting one I try and emphasize, because for a lot of people walking into financial services regulation it's like a new world for them, so I always emphasize that this is about you as an individual and what your responsibilities are in relation to your firm. And if you, the principle

SPEAKER3      10:12      in terms of

SPEAKER2      10:13      what they do in the complexity of the things that they are doing? I don't think that there is a developed understanding the creation of a thing which can then go and do its own thing. Leads to quite complex existential questions as to who is responsible for it. What point can you devolve responsibility? How is it how being it controlled, and I try to emphasize the governance aspects of considering the, as I said before, the unintended consequences of what you are starting off with, what could be the result?

SPEAKER1      11:01      What do you think firm's perception is of maybe what the main conduct risks are that are associated with this type of electronic trading?

SPEAKER2      11:20      I think, as I said before, I think it's it seems to me that they are relatively ignorant, and I don't mean that in a pejorative way. I mean, I just think it is simply that everybody is reading the Lady Bird book and

really, we need to be reading Tolstoy. And yet nobody yet knows what Tolstoy is, what the Tolstoy readers. So, there at the moment thinking, oh, what if my if my algorithm blows our clients up, that's kind of the level it has got to. Rather than thinking what is what will happen should it do something that it wasn't intended to do? I don't feel that there is that kind of developed sense of this could have very significant ramifications further down the line or if it impacts on another algorithm, which then impacts on another algorithm and so on and so forth. That kind of chain reaction, I don't think there is a necessarily that kind of debate happening. I don't think there's that kind of thought process yet that has as that is taking place, I really think people are struggling with simply understanding conduct risk.

SPEAKER1      12:38    In itself, what do you think is behind that? Is the is the regulator failing in some respects, or is it just a lack of technical understanding as to what the algorithms are and what conduct responsibilities in terms of what was sort of what do you think the root cause of that is?

SPEAKER2      12:59    I think the problem is that I wish I can describe it as a bit like dealing with HMRC when you deal with HMRC. They think that you as a business, your only interest in life is getting your tax right and paying tax to HMRC completely convinced of this. And the FCA is exactly the same. They're only interested in you in regulatory compliance with our rules. They don't necessarily grasp that for most firms that regulation is something that is accepted, something that really, they have to do, whether you like it or not. But it is not something that is necessarily within everybody's mind set to actually fully fathom. And I can see people wrestling with some of these really quite complex things I talk about and explain and realisation that this is not their day job regulatory compliance. That day job undertaking trades, researching trade, building algorithms, doing whatever they do. And it's therefore trying to layer a different language and a different culture on top of what they are, where they're not living that culture all the time. So, the FCA has got a very, very, very long way to go to empower a regulatory culture, particularly for this kind of innovative geeky mathematics and those kinds of people who I know often have very little or no background in financial services regulation quite often. And why should they not need to do what they do? And so, I'm not sure it is anyone's fault. I'm not sure there's anyone to blame. Is it simply that this is a very young industry and yet the speed of technological growth and the way these things can have an impact on the markets? The regulators are, I think, somewhat slow to recognize that the impact. Of how these things are happening. He's going to be a little bit like a monster like Bitcoin, where you've got a population who knows what it is but

doesn't really understand what it is. And I think that's very, very similar to what's going on with the with the algorithmic stuff.

- SPEAKER1 15:57 Do you think the do you think the regulator will be able to identify
- SPEAKER3 16:02 potential
- SPEAKER1 16:03 risks in algorithmic trading themselves? I mean, they may not be succeeding in getting the message out to the firms, but do you think they were even able to identify sort of ex post?
- SPEAKER2 16:23 I feel the only way that they will identify it is in circumstances where they're able to see a disorderly market has been created. I cannot and I think in some respects, why should they because then their obligation is to look at a statutory obligation, rather because they are trammelled by what they are obliged to do under the act is to ensure that relevant markets function. So, until such time as algorithm's impact on the relevant markets functioning well. They will not be on regulatory priority for them. However, by that time, it's probably too late. And I would also say that I have to be very careful about how I talk about what this overseas stock exchange was quite substantial, but then level of understanding of algorithmic high frequency trading and improper and abusive algorithmic high frequency trading was close to nil. And it was only when I engaged an alpha trader to so I could explain to him, this is my understanding of how it goes wrong, this is how I understand it. Abusive trading this month. Study what you need to do to abuse somebody else trying to transact. And we agreed we are creating a model. And I took it to them, and we overlaid it with some of the trading activity. They'd say it was almost like an incredible jigsaw fit and they were just like stunned. They said, oh, wow, now it all makes sense. And I said, yep, I'm only showing you a snapshot. And I'm just thinking, well, you know, this was a relatively basic level of explaining, you know, these are the kind of abusive ways it can happen. And I'm thinking is if people want to do it properly and do it really well, will they ever be able to grasp what's happening? I just wonder I think regulators are way too behind. And I see nothing coming out of the FCA which really comments on this stuff at all.
- SPEAKER1 18:37 Is that being that a generational thing or is it a resource thing? Why do you think that is? They can do it because they can't afford the people.
- SPEAKER2 18:47 Where I to be honest with you, I think and I'll tell you why I know little bit about this, because I was been reading some of the blogs and, you know, transactional activity on markets and the people who are algo traders and commenting on, oh, did you see this going through? And so on. And I think, you know, there's so much which is allegedly abusive trading. And yet the enforcement activity for the FCA seems very, very

slim to nil in relative terms. And I think in all this is a bit like to catch a thief. You know, you have to understand the one. In the same way, in order to understand the algorithmic models, you need to have people who have that mathematical background to be able to interpret and understand what they have, how they have been created. At the moment, self-regulation just assumes nothing's going to blow up. And the structures within the organizations that will that make sure these black boxes don't blow up.

- SPEAKER1 19:59 And is it always a case that. You know, the presence of algorithmic trading is necessarily going to increase the risk. Do you think there's any situations where actually it might reduce conduct risk because you're taking, you know, that human emotion out of trading in humans, maybe greed and all the rest of it?
- SPEAKER2 20:22 When you talk about greed, you're talking about some kind of fraud risk. Because this is all about in some way taking some kind of pecuniary advantage, so I equate that with fraud. So, it may be possible that algorithmic trading will identify a counterparty whose activities seem to be out of kilter with what
- SPEAKER2 20:58 irrational
- SPEAKER2 20:58 trading activity should be. It may identify, for example, a great example of things like carbon credit trading, where there's no real kind of centralized depository and it could be recognized very swiftly. You know why so many people trading carbon credits on this exchange? Where did they come from? It's not possible on the exchange. And so, I can see that there are values to the effect of the block chain type approach connected with algorithmic trading so that you can actually say, right. You know, this is efficient trading between different institutions in which institutions can lay off their risk to each other and amalgamate their trades and hedge. But I also see the and this is a point I made to you earlier. And my biggest concern, actually, is that the less human oversight and supervision there is, the potential there is to not actually have the efficiency the human brain can create by that time in an area where algorithms are left to operate by themselves. Eventually they will stop operating because they operate on binary. they will not do anything, nothing until they're told, oh, just do something. But why should they? Because that's not logical unless they just do random things. But then that's dangerous because it's not programmed to do random things until it doesn't do too many random things. You're still imposing control. So, there's still there is there is a risk that by trying to turn over transactional activity to machines, you drive liquidity out of markets

SPEAKER2	23:10	and increasing
SPEAKER2	23:11	volatility. Apart from the point at which everybody wants to trade, which is beginning of the day and at the end of the day.
SPEAKER1	23:24	Are you aware of any? Conduct risk incident specific instance involving. Algorithms in these sorts of, you know, in these sorts of FICC markets that have occurred in the last few years and what sort of maybe how the firms, or the regulators have sort of reacted to that.
SPEAKER2	23:47	I said, I'll give you an example of the exchange visited and showed them that this is what's happening on your exchange.
SPEAKER2	23:55	And obviously, they didn't
SPEAKER2	23:56	tell me what they then did. But I mean, I knew that they were going to be in contact with the relevant brokers to determine whose which kinds of trading that way and whatever activity was going to take place. And what troubled me was I don't think I'm, you know, some international expert on algorithmic trading, but I think if I could see it
SPEAKER2	24:20	and they
SPEAKER2	24:21	couldn't. That's pretty damning. And I think the European exchanges are even weaker.
SPEAKER1	24:33	And the and that weakness is that. What is that? Is that because is that because there's a concentration of expertise, in particular financial centres, and maybe if you have those financial centres are more fragmented and they just don't have access to the skills and the staff.
SPEAKER2	24:55	Yes. So, the quality of personnel, if you can if you are really smart, you're not going to be working.
SPEAKER2	25:04	You're going to go
SPEAKER2	25:04	look for work in an investment bank. If money is your major draw, which for most people it is. And therefore, there is a, unfortunately, quality issue in relation to people working in these various exchanges that they do not attract, it would seem the brightest and best. The very, very brightest and best on these graduate schemes into various investment banks and then find that find their position and then if they find it takes life stifling an investment bank, they go off and create their own thing.
SPEAKER1	25:45	And in those I mean, those investment banks, because society's been moving towards more miniaturization, really, and reduction, if anything in the

SPEAKER1	25:59	size is
SPEAKER1	26:00	not always the thing anymore, it's sort of speed and nimbleness. Yes. Have you seen any moves in this sort of firms that you've an enterprise that you've maybe worked with to reduce overhead in terms of reduce the number of staff on account of increased algorithmic activity or automation or something like that?
SPEAKER2	26:30	I can't comment on that. I wouldn't be able to specifically confirm or deny that. There is without a doubt, all the major banks I've seen have been slashing staff
SPEAKER2	26:47	left, right and
SPEAKER2	26:48	centre. And what I would say, however, is that the very most senior
SPEAKER3	26:56	people are going.
SPEAKER2	26:59	And they're not that senior staff give a good example, [REDACTED] as a global bank, and they literally got rid of all their credit to people so great to people of global heads. So, you now have these incredibly senior people who are who are sort of CEO type people. Across the bank, and then there's this massive drop down to people who are effectively manages. As the very same people who really don't know how things happen at the coalface. And you got
SPEAKER3	27:41	relatively
SPEAKER2	27:42	junior people in management roles, in management manager roles, who are trying to take up the slack, and there is nobody with that kind of level of
SPEAKER3	27:54	having been around
SPEAKER2	27:55	a lot, but also very, very bright, very knowledgeable. And I just think that that vacuum is a disaster waiting to happen.
SPEAKER1	28:05	And that's quite a recent development.
SPEAKER3	28:09	Yes.
SPEAKER2	28:09	That is within the last 12 months, and I know that for sure, and I know that's happened, and if it happens, [REDACTED] six I saw happen about when I got made redundant nine years ago, they did a similar cost cutting exercise, but they did it in a different way. But then when one bank does that, the consulting firm, whoever, only a bunch of idiots they used, they, they did it with a couple of the other banks first and then they go and sell it to each of the other banks. Brilliant. Really. And so, and they all basically follow beggar my neighbour and to my mind, the impact of all of this cost cutting is going to be this idea of, oh, we can



do it cheaper, we can automate, we can cut costs, we can cut out. And I'm just thinking, well, you need it before suddenly you don't need it now. And it's kind of thinking, well, once you've made that chop, you've lost a lot of knowledge, a lot of experience. How do you solve a major problem when it happens? So, machine learning to fully equal.

SPEAKER1 29:30 So that says it's possible that the ability of the people that are coming in like they possibly they don't have the same knowledge base to maybe identify some of the specific issues that are caused by.

SPEAKER2 29:46 This is the problem; I think what tends to happen and I've seen this happen is that we'll throw money getting a whole load of nuclear physicists and mathematicians to write all these algorithmic programs and so on. But they don't live in the real world, so they don't in the regulatory bodies, they don't really understand. Well, you know, it might do this brilliantly, but what about the impact on our clients? What about the impact on the market and how can it be abused? They don't necessarily have the depth and breadth of understanding. So if you lose a lot of the knowledge that was in the bank that that that depository of knowledge, which basically goes home every evening, you are left with the potential for....There isn't that community understanding the right way things should be done, the right culture, which helps to mould the entire organization. And that that, I think, is one of these one of the unintended consequences of doing these kind of mass reorganizations, people don't think about how that can impact on the culture of the organization.

SPEAKER1 31:16 In our own culture of organisations, obviously recently SMCR has been promulgated across. I mean, further back, the banks were the first, but more recently, the investment firms have taken their medicine on Espanol and a big part of that was I think there's a new certificated function for those people that are involved in supervising algorithmic trading rollout and things like this and collaboration. Something obviously about 10 years in the making. Do you think that possibly that approach is already out of date and that this sort of fixation with looking at humans as the actors that you need to target for to ensure good conduct is really becoming a thing of the past? And actually, it's more the actual machines themselves as it becomes more sophisticated.

SPEAKER2 32:18 I think there's two points to this, that the problem or the issue with assumption is that those who get it get it. And they are aware, they fully grasp that, but there is a core of people who will not be interested in the whole thing about regulation and think it's all over cobblers and I have to sign some piece of paper and that kind of thing. That's how they see it. And the problem is that you can make somebody a

certificated function. But if they hear it in Greek and don't understand, just nod and say, yeah, whatever, as long as I get my bonus unrealistic, it's not going to have the impact it needs to have.

- SPEAKER2 33:10 And so, I
- SPEAKER2 33:10 think it it's going to take a while for that to be added to and for people to start really grasping. And sometimes, you know, you tell people things, and they don't hear, but they don't really listen, or they listen. I don't really hear it. I think the best way round should be they're not really grasping and absorbing into themselves. So, I think the difficulty is going to be how do you get across to the people who are the geeks who are actually the brilliant people who write these programs and creating more and more artificial intelligence? How do you get across to them the need to build morality and ethics into the thing that they are creating?
- SPEAKER1 34:03 And that building the morality and ethics, I mean, are you aware of any sort of initiatives to maybe design in ethics because maybe enter the code?
- SPEAKER1 34:13 Because I mean, I've read,
- SPEAKER1 34:16 for example, about Google. They've come under the scrutiny from nation states and maybe supranational organizations like the EU for some of their use of big data and the algorithms they use to access that data. And if you think of like a self-driving car. That's just an algorithm that's running on an algorithm, and the person who is the user of that could specify, oh, I want to get from I want to get to the airport in the quickest time possible because I'm going to miss my flight and therefore run through a lot of calculations. And it could take a shortcut and accelerate and break the speed limit, take a short and run over a kid and their mom or something. And that it may think, oh, I've reached the I've achieved my goal because I've got my passenger know the quickest possible way. But that is the collateral damage. So that's sort of having to look at almost designing it. And then there's questions about while he was designing in the ethics because, you know, it's my cultural ethics versus your cultural ethics. American cultural ethics might be different from a Chinese person's cultural ethics. Is that there any sort of analogous moves in the financial industry to do that, do you think? Or is that still a long way off?
- SPEAKER2 35:38 I think that there are vague terms by organizations like CISI to do some kind of integrity type training, which I think is quite funny in a way, because you have integrity, you don't. I think you can be explaining the dangers of routes you can go down, which are cautionary tales, but to try and train people in ethics, I think is missing the point of human life,

that behaviours that built in childhood is what control govern your behaviours as an adult. And I think the problem with I have with all machine learning and algorithms is that it is ultimately based on

SPEAKER2 36:33 the decision

SPEAKER2 36:33 making from the most the person with the strongest voice in an organization. And it is I have seen so many occasions of that will be fine. And I'm thinking it really isn't fine. And I have either as a consultant, I've given my strongest possible advice and been overruled. But that's their choice. And quite often, I think, you know, I wouldn't do that myself, but I think it's very brave and I just don't think it's there. I don't think that there's a lot of talk about virtue signalling about ethics. But when push comes to shove and it's all we going to get this. Are we going to get our model out there and get more clients? I think corners are cut and that's the nature of it.

SPEAKER1 37:36 And I mean, obviously, again, we've had some scarring and human behaviour and conduct tests, there's a big emphasis on using sort of deterrents, but also coercion and also encouragement, you know , in terms of, for example, using remuneration as a way to steer people towards better conduct by saying, look you know, there's a reward here if you behave well . But there's also a consequence in terms of a reduction if you don't follow the procedure or you miss your training or something like this. Can you see any sort of way that it might be possible to translate that into machines? Because, you know, it seems to me that potentially that type of way of thinking could already be coming out of date because a machine may not respond to those type of incentives and punishments. But they are. I mean, I think I read, I think before Christmas that the EU has been considering whether to ascribe agency to some robots and some machines and whether, you know, almost like animals, animals have a degree of agency like the Dangerous Dogs Act. Yes. Almost attributed the degree of agency to a dog that that, you know, went off the leash. And but at the same time, the human owner, they could get a fine or a jail sentence for it, maybe bring them up here responsibly. But then equally, you know, the owner could have been quite responsible, and the dog could have acted in a way that was maybe not so foreseeable. And, you know, but the dog effectively gets punished because they get put down. Can you see any

SPEAKER1 39:08 anything

SPEAKER1 39:09 sort of any analogous sort of moves in that sense or....?

SPEAKER2	39:14	I think the fundamental problem is that machines don't have a soul that has no remorse. They have no emotion at all. Of the things which are the most powerful impact on human behaviour
SPEAKER2	39:30	are emotions,
SPEAKER2	39:31	<p>not rational thinking. It's emotional thinking and machines work on rational thinking, they work on binary, it's either one or zero, it's a yes or no, and it's a series of they can't make, and they cannot think abstractly. They can't make a yeah, they can't make a jump. They have to an effort to somehow have different options to get to, you know, a night move type of thing. So, and the problem is, for example, and this is I think I see the problem with these algorithmic cars is given an analogy for the fire to work in another car. And you've got you're driving along a road and you, a woman and a child, step out in front of you. You have you have you have to swerve, which you hate. And that is an unconscious decision. You don't know which one you're going to do until it happens. And that is you are responsible for whichever one you do, but it is down to your values, it's down to your upbringing, all sorts of things, and to an extent, the appropriate conditions and how quickly you can move with the machine. They will simply do the commands that have been provided to them. We also have to recognize that things go wrong. A piece of code is messed. A human has made an error. I remember there was this is a couple of decades ago, they launched this incredible telescope into space and the cost of hundreds of millions of pounds. And that a tremendously exciting to see the images that were going to come back. And then when came back, a little fuzzy and rubbish. And so, they had to launch another rocket and trying to, and it cost big to actually to make the mirror on this telescope like thousands of a millimetre difference makes it really complicated. And it was oh, it was finally worked out that what it was is somebody, an engineer, had forgotten to put a washer underneath a nut. So, and this incredibly complex structure had been built, costing millions. And so many have gotten a washer and that was it. And that's what screwed it. So, we have to accept that if we're going to have a financial system run by things, other humans. There will be we accept that there is nobody to blame. Oh. We want to ascribe blame to somebody and blame the machine because you can't punish the machine, so somehow there's got to be some kind of value cost. Which we accept that this is the nature of what we are, we are ceding to these machines.</p>
SPEAKER1	43:02	<p>Could you not order that the machine be destroyed or possibly that you almost have like a black box Star Wars, where instead of having tea</p>

plus one monitoring or something, where it's all after the event, you actually have another algorithm in the market which is identifying

SPEAKER2 43:20 the rogue algorithms,

SPEAKER1 43:21 if you like and is and is effectively stopping them from even executing or switching them off before they, you know, the damage gets too big or something.

SPEAKER2 43:34 I think what you'll end up with is endless satellite litigation. I mean, I don't want to do a parallel to those satellites, but is that is endless litigation, in which case it will be argued it wasn't my machine which caused the thought. It was somebody else's machine, which back to the monitoring and so on. And trying to pick apart. The decision-making coding behind the decision making of the each of those programs

SPEAKER2 44:11 is, I

SPEAKER2 44:12 think, I cannot imagine how complex that's going to be. Compared to trying to interview an individual. And say you were at fault for what you did in the market, that's difficult enough that time consuming and painful enough. I think the point is that I think with kind of identifying I think your questions on point to say. There is very little deterrence. To creating something which creates havoc. Until such time as it is, it is the entire responsibility for everything that that thing does is ascribed to its owner. And whoever set it up and controlled it or let it loose. So, and that that will be something that will be subject to law and regulation, because at the moment I'm not familiar with what there that there is anything at that moment, at this moment in time. I mean, the moment the FCA will be very much on tap, if you choose to use something like that, is effectively an outsourcing. So, you are still accountable for it. And that's why they feel relatively comfortable.

SPEAKER1 45:46 But is that sort of desire, that's quite human desire to attribute blame because we're used to that liability. We used to the courtroom dramas. We used to all that stuff. And then you've got the nation state. Which is an actor which is supposedly neutral, obviously not the case, but it's in theory and legal sense, it is supposed to be a sort of neutral arbiter of what is legally correct or not correct. Is that really the whole concept really on its last legs, because even if you even if you if we try to blame, say, the owner of the user of the algorithm, if it was third party that created it or something, does that does that really stop or deter the problem? Because, you know, the if the algorithm itself recalibrating, for example, is learning on data that is taking an ever-greater amounts of data are being taken in by in the world. There's so much data now that can be taken in that's incomprehensible to

average human being. And they have a human being, can't even process it. That actually, even with the best will in the world, that person. May not it may not even be comprehensible, because normally in law, the law looks into what is what was reasonably foreseeable. If someone's going to be held negligent for something and that is possibly where the limits of the legal system and the nation state and regulatory actors

- SPEAKER1 47:38 is going to be
- SPEAKER1 47:39 exposed. Yeah.
- SPEAKER2 47:43 I'm pausing, I'm thinking about what you said and effectively what you're saying is that the human, the human brain has not evolved over the millennia.
- SPEAKER2 47:57 To.
- SPEAKER2 47:59 Its structures have been changed. We see the world in a particular way. We see I pick up a pen or a letter, pick up a hammer and drop it on my toe. That's my fault. I'm responsible. I'm annoyed with myself for dropping him. Right. So, if someone else drops a hammer on my toe. I can see they drop the hammer on my toe. I'm annoyed with them. I like I call them to account. I blame them. If an algorithm decides that the most efficient way that it does its thing could be that it drops a hammer on my toe. I'm still going to be unhappy about it. I'm still going to be upset and I will be looking for some kind of I'm going to be looking for. How do you how do I resolve this until I'm finally taking a stand, a really basic level. But I'm going to be looking for somewhere solving this. So, I don't see human culture being prepared to accept. The it's fine because it's too complex and too time-consuming to work out why something has gone wrong. I honestly would take the approach of the system, the Daily Mail, Daily Express, and just find somebody to blame. So, I don't think it's going to go away. I think. I think that may be the desire of big tech is to say, look, you know, everything you know, you're safe with us, will sort it out and then eventually say, actually, it's all too complicated. You can't really blame the state. It was not the machines. I don't think culturally that will ever be accepted. I'm a dinosaur, but I just I find that difficult to believe. Well, I mean,
- SPEAKER1 49:47 I don't know. Have you read the book Homer Deus by Yuval Noah Harari?
- SPEAKER2 49:56 I think I'll be on my reading list now
- SPEAKER1 49:59 because he talks about the future world that he thinks we're heading to, which is a world where he thinks it's almost incomprehensible to

human beings. But I think he thinks it's coming around quicker than people might think. And what he's saying is that our natural instinct to put ourselves at the centre of everything. We're going to have to get used in all of the lifetime of the homo sapien, we have been used to being the top dog in terms of intelligence. And therefore, we are used to calling the shots. We're used to attributing the blame. We are used to being held accountable ourselves when something goes wrong. However, what he is suggesting is that actually that we are no longer going to be the masters of our universe. We are creating things which may take over from us and actually become our masters to a certain degree, and there's a certain obviously very philosophical idea, but and so therefore I whilst I agree that human beings are always going to want to try and attribute that blame, that's what we used to. You know, I just wonder whether actually we we're going to have to rethink, I think, our whole way of doing regulation in the sense of instead of it being a sort of responsive thing where we try to maybe fine or ban somebody two years after the event is something we have to have almost like. It's almost like a defence set up where we are actually arming ourselves with the tools to actually disable targets.

- SPEAKER2 51:53 So, what you were talking about just moments ago with the author of this book is he seems to be talking to a thing which is at the very basis of human emotion, which is about power and control and desire not to be unkind, not to be out of control and to be controlled by something else. And the fears that those introduce, I'm entirely in agreement. And what you are saying effectively is and if I may take it into a slightly souper Marvel Comics thing, a Judge Dredd type scenario where George Strait would come along and make the make an instant decision and be judge, jury and executioner. And I kind of see that. I can see what you mean in the algorithmic world. I agree. There wouldn't I think need to be a miss may need to be built into the know the power of the regulator to be able to shut down algorithms which are abusive. In so instead of having a trial in which you say, right, we don't want you to carry on doing your thing, but we're going to have to get the injunction out. We're going to have to go to a full hearing and all the rest of it. That can take weeks and months instead. I think what you're saying is. If FCA is going to allow these things to control the markets, it has to have the power to shut them down and then determine whether or not what they're doing is acceptable afterwards.
- SPEAKER1 53:37 Exactly. It's almost like an absolute liability situation, almost,
- SPEAKER1 53:43 where you have to shoot
- SPEAKER1 53:45 first and then ask questions later and you could have questions and where it could get legally complicated, because, as you know, the FCA,

the algorithms that the FCA would want to use in this situation, they may malfunction themselves and they may take out what otherwise innocent behaviour is. And what happens then, because at the moment, FCA is a company limited by guarantee, there's only limited situations where they can be taken to task, they can be fined and all this kind of stuff. They've got to be shown that they've acted in bad faith. But if they're not acting in bad faith and they've gone out and what happens then? And actually. Is it going to be the only choice that we've got, because in some situations where, you know, markets are probably going to become more and more disintermediated and I think societies may become more distant, media and our concept of nations and traditional power structures disappear. We may have more types like city, state and almost like nomadic citizenship and nomadic corporate citizenship. Is it could even be possible to hold people to account if they are not within your borders, I mean, we already see it today with direct electronic access. You know, there's many, many occasions where I've seen myself like an actor from, you know, maybe the Far East, but put down a wash tray just in the most basic sense on a European market. And realistically, the FCA or not regular, they can't do anything about that other than, you know, look at the intermediary, look at the broker. But if they had more disintermediation and countries are vying for revenue and they need those that order flow and everything else to try and, you know, create employment in their own jurisdictions. So, they have to sort of allow it to continue, you know, where do we go from there? Because who to hold responsible? You know, there's only a certain limit.

SPEAKER2      55:46      Well, this is the problem. This is the problem that a lot of banks faced with the drinking thing is that they didn't want to deal with overseas countries and overseas banks who were operating in a different culture and a different way. And they were saying you still have to deal with them making life stuff. Why should we? Because then you're going to find this ridiculous. So, in the same way, I think until you have unless until the whole world revolves around a single centralized depository, the single centralized exchange with supranational enforcement. And cooperate, I say cooperative, supranational enforcement, political ramifications, protect people, political ramifications, bend the rules, allow things to happen, which shouldn't happen, and so on and so forth. But going back to your question about the algorithmic stuff, and I think that that is a very good analogy with the way the motorways are built, that the construction companies are at least a section of the motorway. And effectively, they what the quicker they can get it constructed, the quicker they get to return to the motorway at the end of the day, at the end of the lease. And to my mind, it's a very clever way of doing it because basically the incentive is on them to hurry up



and get it done. And it's the same with the algorithmic stuff, if you can incentivize behaviours, which is more likely that you are going to go into the sin bin with your algorithm is going to go to the sin bin, and you're not allowed to release any others until that one's been investigated . It will be a very effective disincentive to create algorithms which. Are abusive or blow up or blow other things up and so on, but what will I think happen

SPEAKER2 57:52 if the sky

SPEAKER2 57:53 goes down that road is the FCA will find themselves in the same kind of friction with the firms it regulates, as in the House compliances. So, at the moment, they've got this kind of big stick deterrents that, you know, is, you know, the regulators are going to come in. It's like being a big baddie outside, but soon that will kind of change the way that they become part of the organization that gets harangued when people are not able to get what they want. So, I don't think this is a complete panacea, but I think that structures will need to be created to identify the horizon risks that these algorithmic. Arrangements create a particular, as I mentioned before, the unknown unknowns, you know, the unintended consequences of these things, which no one has quite worked out yet. And so, yes, I think there's got to be, as it's such a Wild West, what seems to have happened in the past, and I'll give great examples, peer to peer lending as well, where they just did not have a clue what it was about. They brought in legislation which didn't work. Most peer-to-peer firms could not comply with legislation because it wasn't. Their business models had evolved, and it was a complete mess. And there's been some massive blow ups. A lot of people have lost a lot of money. And I think very much the FCA, I don't think that they're necessarily very good futurologists.

SPEAKER1 59:43 Do you think that the solutions have to come from industry then, as opposed to legislation or top-down approaches?

SPEAKER2 59:54 I think, to be honest with you, I think I come from very bright people like you highlighting the kind of problems that these this new world is creating and hopefully getting some traction so that people can actually say , hold on a minute , this sounds like the best thing since sliced bread . But you know what? We're going to have to package up really, really well, because at the moment, it completely blows up. I don't think industry is has the slightest interest in approaching this this kind of intellectual debate with a prudent risk mindset that only interested in the profit incentive.

SPEAKER1 01:00:43 Do you think there's any desire in industry, even if they wanted to just think that there would be any, do you think that they would collaborate

with each other, different firms, or do you think it's from what you've seen, the competitive edge is just too great. And actually, they won't want to lose that.

SPEAKER2 01:01:02 I think in part, the bleeding edge technology cutting edge to verify this point, that really smart money is in the very little firms. People who know that they're good, they know what they're doing, that they're clever, they're smart. They don't have to be collaborating. I can't see what's in it for them. Yes, when you get to the black rocks and you know, the big investment firms, big investment banks who got a lot to lose and they know that they're under the radar. Yeah, they got and there's a whole new culture around them. There's a whole layer of management and governance and get out. Reviews and you know that they they're tested on everything from their diversity to that to that kind of corporate outlook and behaviours and all the rest of it. Yeah, but then they're lumbering giants. They're not the ones who are going to be doing the exciting, innovative stuff, some of it which some of which will end up being landmines. But we don't know which ones those are yet. So, I cannot see an incentive. I really can't I why would you tie one hand behind your back if you were innovative? Firm. You wouldn't you, if you stop to believe that he wouldn't.

SPEAKER1 01:02:41 And what about those firms that sort of, you know, maybe they're a bit more old fashioned, you know, the traditional sort of brokers, maybe brokers on the edge of a traditional sort of ethics broker? You know, where do they fit into all this? Because that's not the case in those types of terms, unlike the sort of challenges of disruptive firms. You know, is it not the case that they are a bit more reliant on outside vendors and things like that? And do they really understand,

SPEAKER1 01:03:10 you know, your

SPEAKER1 01:03:11 impression? Do they really understand the sort of tools that they're deploying in the market?

SPEAKER2 01:03:17 I think you answered your own question. And they all of the old school, they are the old, you know, grey hair, getting grey, getting old, getting tired. I remember reading a brilliant book. But it was a consulting firm and very small, very successful consulting firm. And he made a very good point. He said disruptors

SPEAKER2 01:03:51 only just

SPEAKER2 01:03:51 normally, virtually always only disrupt their market once. Until they get market share because of they carry on disrupting their market, then they're cannibalizing their own market. What's the point? Unless they sell out and start all over again? But there's not many. There's not

many those that happen. So, the nature of disruptive markets is that they will carry on being disrupted while there are new, innovative, disruptive, able to do something about it, once they all get fat and lazy, then they get become old fashioned and they become satisfied with where they're at. And I think from what I see of these various markets, including LME. That the largest firms still have the market share, but they're only holding onto that by their fingertips because of it, laziness, inertia. From their clients,

- SPEAKER2 01:05:03 once
- SPEAKER2 01:05:04 they start realizing actually we can get this done for a fraction of the price and no difference in service, then those other funds are just literally. Disintegrate. They will vanish. It's just there's just going to be so little margin and so much cost, I just think that this guy's sort of disappear.
- SPEAKER1 01:05:27 And they could be sort of a vacuum.
- SPEAKER2 01:05:30 Well, I think the vacuum is going to be who is going to be the market makers? Because the algorithms on
- SPEAKER2 01:05:38 and that's
- SPEAKER2 01:05:39 the point, you need to have substantial capital. And have the balls to lose it. I keep losing it until you can throw your way back up and the disrupters don't do that, they're not interested. They as I said, they are parasitic. And I don't mean that in that way. It's just the nature of them is that they are all very effective. At nibbling at the price to get a teeny tiny bit for them at very, very low cost. But I don't really think they contribute significantly to the market; they may allow things to happen. They may enable or they may push on the lazy broking firm to up their game, but somebody's got to be out there, and he's got to stand in the market and prices all day long. Otherwise you have no liquidity market B. You get a huge volatility and that's no good for any stakeholder.
- SPEAKER1 01:06:54 How do you rate the effectiveness of the UK's approach generally to maybe mitigate in managing conduct risk and maybe in the context of algorithmic trading. Versus maybe like some of the competitive jurisdictions, maybe the EU. I mean, obviously, if it too had quite a big section on it about algorithms and the state's....
- SPEAKER2 01:07:25 I can put a really simple answer the limited amount of enforcement activity indicates the limited effort or ability to impact algorithmic trading, because I remember visiting the LME, going down to the floor, trading finished, and yet still the prices were flickering. And this is nonsense. I mean, they were they were trying to trade on and it's

nothing and I think this is [REDACTED] and it strikes me and as I said, I've read I extensively read up on what was going on in terms of algo trading and blogs and people talking about , well , you know , see what happened on that trade . And, you know, this happened at this time. Is that no enforcement action, this visible. Put it that way, I don't get to hear of anything, and I think it's just in the too hard basket at the moment.

SPEAKER1 01:08:34 Do you think there's anything that the financial sector could learn from other highly regulated sectors that might be deploying sort of innovative technologies to help hit? Every face and address some of the some of these issues.

SPEAKER2 01:08:59 I'm thinking. I think apart from pharmaceuticals, as far as I'm aware, speculation is the most onerous. I know a law that trying to make ends meet, I think it's made driven by tech companies trying to sell their algorithms, telling us how amazingly brilliant they are at doing things. And I'm thinking, yeah, I'm not convinced. The solution? Is that we have highly technically trained intellectually capable workforce who genuinely understand how these things work. Because huge numbers of people I meet in compliance have a relatively low level of understanding of compliance itself, let alone algorithmic trading. I mean, it used to be that compliance was like nobody went into it because it was a thing that you either were you already were in or at least now it's like everybody wants to get into. It's quite good money and that sort of thing. So, you drive out problems, when people understand

SPEAKER2 01:10:48 what

SPEAKER2 01:10:48 the situation is, you drive out fraud, you prevent. Risk where people actually understand what actually is now. I think if you go to a lot of people, ask them, tell me you've had gone out with them. Oh, yeah. What actually is it? What does it do? How does it work? And I think you'll find most people haven't got a clue. Even what it means, and that's part of the problem, we are sleepwalking, I think, into a technological age where we don't really understand decisions. We make a good example as people who are thinking psychologists call plan fixation. Where you completely rely on what you're being told and you've been told these algorithms are fine and perfect and everything's brilliant and just have to follow to do what it tells you to do, it will be fine. And that's a great example of that. A number of cases of people driving in the middle of a desert, just like, oh, satnav told me to go this way. And I think that's part of the problem until we actually really understand what we're dealing with here. I'm not convinced that regulation should permit it. Apart from within very strict boundaries. Why not? Something that is immensely complex and not fully

understood to be permissible, where things which are not so complicated and are just as high risk are not permitted, makes no sense to me.

- SPEAKER1 01:12:37 But if we were to prohibit
- SPEAKER1 01:12:39 it, wouldn't it be the
- SPEAKER1 01:12:41 case that it would just move offshore somewhere?
- SPEAKER2 01:12:48 I'm not. But that would still need to be access to the market to be able to do it.
- SPEAKER1 01:13:06 But might the markets, who I mean, markets themselves are conflicted, right, their businesses as well? Yes, they have a sort of dual function, which is kind of strange. They have a quite a regulatory function and they also
- SPEAKER1 01:13:19 obviously are
- SPEAKER1 01:13:19 profit
- SPEAKER2 01:13:21 entities.
- SPEAKER1 01:13:22 So, might they not just move offshore with the providers?
- SPEAKER2 01:13:26 The interesting question that we just drive all business out of onshore locations. I think if that were to happen, tax authorities around the world would ultimately be doing what they're doing now, which is to reduce the possibility of there being no safe havens. I can see and this is always the argument that is brought up by kind of innovative businesses. Oh, if you do that, we'll just go offshore then. And I think everybody just do that now. It sounds like you have a plan. It's not against me. Well, if you do that, I'm going to go. I think it will. Why are you telling me you're going to do that? You know, you've just told what your nuclear option is, you know? Why did you tell me that? Because I just don't believe they will.
- SPEAKER2 01:14:34 Because I think
- SPEAKER2 01:14:38 what we need is critical mass. They don't want to have grubby little bits and pieces of money from offshore locations coming in, they want to become they want to be the disrupters who become the great old men. That's the point. That's my view. And to some extent, this has to be something that's coordinated globally, not unless they coordinate globally, but are recognized globally that the impact of these things can have very significant ramifications for all markets and all economies, and therefore it has to be approached in a collegiate way.

SPEAKER1 01:15:23 Finally. I mean, what would you do a person like what would your personal main concern for the future be without, you know? How about how the growth of an autonomous trading and things like that could impact the collapse of markets in the future?

SPEAKER2 01:15:50 I'll give you an example of quickly who you were very familiar with, and this case is public, I don't have a problem with discussing it. This matter was one of what I would call. A mixture of intellectual capital. So, he was doing what he did because he thought he was being very smart and he was enjoying the ride of doing something which he thought was tremendously clever and also intellectually eager, believing that he worked out a system that would solve this problem, even though it was in breach of the rules. But because he convinced himself that what he was doing was the right thing for the bank, even though the bank didn't know what he was doing the right thing by it,

SPEAKER2 01:16:41 he

SPEAKER2 01:16:41 broke through all the arrangements, the risk limits and all the rest. My concern with the algorithmic trading and the machine learning, the artificial intelligence and so on. Is that ultimately. The machine doesn't know the social evil that it may be doing and is not in a position to stop itself. And so, unless there's a kill switch to actually say enough is enough. And that is retained. Then I think there is potential risk for financial

SPEAKER2 01:17:35 Armageddon, which is what

SPEAKER2 01:17:37 he came very, very flipping close to actually at one point. And my concern is some of these people are so very, very bright that they think that they are beyond anything, that they're virtually godlike and that's very dangerous. And particularly where these things are so difficult to understand to start with. I just think, you know, are we really prepared to cede our own human decision making to something? And destroy our economy potentially. I think that's a big risk. That's me done,

SPEAKER1 01:18:24 that's done, excellent. Well, thanks very much for your time. I'm just going to stop

SPEAKER2 01:18:29 recording now on.