Demetri Kofinas: 00:00:00 The Hidden Forces Podcast features longform conversations broken into two parts, the second hour of which is made available to our premium subscribers along with transcripts and notes to each conversation. For more information about how to access the episode overtimes, transcripts and rundowns, head over to Patreon.com/HiddenForces. You can also sign up to our mailing list at Hidden Forces.io, follow us on Twitter at @HiddenForcesPod, and leave us a review on Apple Podcasts. And with that, please enjoy this week's episode.

Demetri Kofinas: 00:00:54 What's up, everybody? Unless you've been living under a rock or you don't have an internet connection, you will already know that some really crazy shit happened in the last couple of weeks involving the stock price of video game retailer Game Stop, a number of large, Wall Street institutions, and an online community subReddit called Wall Street Bets, that has now grown to over eight million users.

Demetri Kofinas: 00:01:20 There have been so many competing explanations put forward for what happened here, that it would be impossible for me to try and summarize all of them. Instead, I decided to invite on someone who has done really interesting work trying to understand the mechanics of how it happened. How, in other words, an online community of primarily retail investors managed to pump the price of Game Stop's stock to such a level that they forced the institutional investors who were short the stock to cover and in the case of hedge fund Melvin Capital, to seek a nearly $3 billion dollar bailout from some of its biggest backers, including Citadel and Point 72 Asset Management.

Demetri Kofinas: 00:02:05 In my conversation with Lily, we look at how both knowledge about market structure and the endogenous dynamics of the options market combined with the proliferation of narrative, in the form of internet memes, were used to organize, coordinate, and execute on what was effectively a community sourced short squeeze that caused chaos across Wall Street and left the financial press and the public scrambling for answers.

Demetri Kofinas: 00:02:32 While the conversation about options is specific to Wall Street, the memetic component of this story is the one that I find most fascinating, not only because understanding online culture and how narratives spread on the internet can help you capitalize on trends and monetize momentum but also because its application extends to pretty much any use case you can imagine from investing to fundraising to organizing large scale political movements.

Demetri Kofinas: 00:03:01 For anyone listening who is already pretty well versed in options training, I've provided time codes in the summary section so you can skip ahead if you feel the need to. In place of an overtime, I've invited on Real Vision editor and former CNBC reporter Ash Bennington for a further discussion about the events of the last week, the insanity we've been seeing in markets, and what to expect going forward. You can access that overtime by visiting our website at HiddenForces.io Or directly through our Patreon page at Patreon.com/Hidden Forces. There's also a link in the summary section with instructions on how to connect the overtime feed to your phone so you can listen to these extra discussions just like you listen to the regular podcast. With that, please enjoy this incredibly insightful conversation with my guest, Lily Francus.

Demetri Kofinas: 00:03:59 Lily Francus, welcome to Hidden Forces.

Lily Francus:	00:04:01	Thank you. Glad to be here.
Demetri Kofinas:	00:04:03	I am super excited to have you on, Lily. This is going to be a giant geek-fest, a geek-a-thon. Massive geek-a-thon.
Lily Francus:	00:04:11	I'm the kind of person who late at night posts backtests on Twitter so ...
Demetri Kofinas:	00:04:16	Oh, I know. I know. Trust me.
Lily Francus:	00:04:18	I'm here for it.
Demetri Kofinas:	00:04:18	I'm very excited. Before we get into the meat of this discussion, which is going to deal with Game Stop and the blast radius of the God meme, stick around for an explanation to that, maybe you can start us off by giving me and our listeners an idea of who you are and your background. You're a 25 year old PHD student in bioinformatics, who apparently has a side hobby of trading options and also studying memetics on the internet. How does that all fit in? Tell me, where did you come from? What's your background? How did you find yourself doing such interesting work on this really, really timely story?
Lily Francus:	00:05:03	Definitely. I guess it all starts, I have always been kind of a dilettante in a lot of things. I've always had a deep interest in linguistics. I actually started a linguistics club way back when in high school, which you really can't get more nerdy than that. I think we looked once and the only other linguistics club, high school level, was in like Georgia, the country, not even the state of Georgia.
Demetri Kofinas:	00:05:29	Huh. Interesting.
Lily Francus:	00:05:31	I mean, I went to college and pursued a background in computer science and business. I got about as many finance classes as you learn how to price a basic bond. I spent a couple years in the tech industry, which a couple, again, given my age was like about four. Worked at LinkedIn and Stripe, got a feel of that stuff and doing full stack dev.
Lily Francus:	00:05:56	I've been involved previously in some startups that, as most startups went, ended up with closure rather than being acquired by some cool VC. It really inspired me to look into the biology side of applications and technology. I actually started my PHD fairly recently. I'm a student at UC San Diego. I picked up options mostly when everybody else did. The market crashed, I spent most of the actual crash crash just hoping my Microsoft would hit like 125 so I could buy more. Never did. Learned my first lesson about greed and timing there.
Lily Francus:	00:06:39	I started actually day trading because I knew I was going from this highly paid job in the tech industry to being a PHD student. I was like, "Hmm, maybe I could use my quantitative background plus everything just seems to be going up right now, to make some money on the market."
Demetri Kofinas:	00:07:00	When you say the crash, you mean the 2020 crash this past March, right?
Lily Francus:	00:07:03	Yeah. I mean, I've been an investor for years. I started investing pretty much with my first job in 2016. I was a reader of Wall Street Bets for the last couple of years. Their memes were always pretty fire but I never really delved into the

options side of things but it seemed like a good opportunity because we're all home, we're all bored, and I was like, "Hey, there's free money to be made."

Demetri Kofinas: 00:07:28 Yeah. What is bioinformatics for those who don't know?

Lily Francus: 00:07:33 Bioinformatics is a broad topic. It's basically the application of computational methods to biology. It spans the gamut from making crappy EMRs, like Epic ... If you've interacted with hospital systems that record information, they're mostly garbage. No offense to any of your listeners who work at Epic. Basically, on my side it's more on the genetics/genomic side. It's like we have this biological data, usually these sequences of exons or introns, can we align them to existing data? As a reference genome, can we understand how, let's say, these sequences relate to phenotypic data. It's very raw.

Demetri Kofinas: 00:08:26 Interesting. We'll be making use of I think your interested in bioinformatics when we get into the conversations about memetics. That will also pull from linguistics as well. Last question about you before we move into the actual substance, your Twitter handle, for those that are interested in following you is Nope underscore Its underscore Lily, so @Nope_It's_Lily. One, how did you come up with that name? I'm just curious. What's the background there?

Lily Francus: 00:08:55 I mean, I joined Twitter in late October of last year because I do a lot of work on this model called Nope, which some of you might have already heard of just because it's been gaining popularity this past month. It effectively looks at delta flows on the S&P 500 and if you're not familiar with delta flows, I'll get into that later with more about option trading in general. It stands for the Net Options Pricing Effect. It's really this understanding of how much the weight of delta hedging options is driving the price dynamics of, let's say, the S&P 500.

Lily Francus: 00:09:32 My handle, in particular, is more of a play on words. It's like, Nope, my model, it's Lily.

Demetri Kofinas: 00:09:38 Let's get into options. Let's get into derivatives. Let's get into the market mechanics and market structure side of the story. I don't know if I mentioned this when we started recording but I certainly said it to you before we began, which is that as I've come to understand it reading, your interpretation of this story, and I think generally my own understanding as well, is that there are really two large mechanical components to how some of these stocks, in this case GME, get pumped or have gotten pumped.

Demetri Kofinas: 00:10:12 One has to do with the market structure and the use, particularly, of short dated call options. Before we get into that or as we get into it, give me and my listeners a summary/update. A summary of what happened the last two weeks and where are we? Because it's not just about Game Stop, it's not just about the subReddit Wall Street Bets, it's not just about Robinhood. It's kind of more and more players got into this story, people trying to capitalize and use it for their own particular narratives, et cetera, et cetera.

Demetri Kofinas: 00:10:48 It's kind of actually an interesting narrative war situation. A lot of competing narratives getting flooded into the zone. Give me and my listeners a summary and then give me an update on where we are at this moment.

Lily Francus: 00:11:00 Game Stop was a very interesting story. I mean, a lot of people it only came on their radar I would say about a week and a half ago when it originally pumped from I think it was around $40 to about $70 within a day and everybody was like, "Whoa, what just happened?" I mean, it had been growing for months. My background is in day trading, I've been involved in communities like Wall Street Bets, and Game Stop was always known for months, years, it's this value trap.

Lily Francus: 00:11:32 If you look at their chart, it had been on a perpetual down trend pretty much since 2008. It had two boom cycles with the last consoles, which is an important part of this narrative story because one of the major drivers for the initial flows was this idea that the new consoles are coming out so Game Stop would benefit.

Lily Francus: 00:11:54 It gets a bit more complicated. I mean, the story really begins where this guy on Reddit named "Deep Fucking Value," everybody's heard of him by now, he also goes by Roaring Kitty on YouTube, and he had been in this Game Stop position since about September 2019, if I remember. He really did look for this deep value. He lived up to his name.

Lily Francus: 00:12:21 When he first posted on Wall Street Bets, nobody knew who this guy was. They just knew he put like $50,000 on Game Stop. Everybody saw Game Stop as this archaic once-behemoth that was going to be bankrupt probably within a year. Logically speaking, it was a failing game store in the middle of the worst pandemic in the last 100 years.

Lily Francus: 00:12:44 From what I remember of the original narrative, he was posting every week or every two weeks updates to his positions, which were really just a screenshot of his portfolio. Nobody really paid attention until I would say about April 2020. When people started paying attention was when Game Stop actually hit its lowest point, which was around $4, basically, at the bottom of this pandemic.

Demetri Kofinas: 00:13:09 When was that? That was in April?

Lily Francus: 00:13:13 Let me just quickly refer to the chart. It was roughly ... It was $4 as late as August of 2020.

Demetri Kofinas: 00:13:22 Okay. Interesting.

Lily Francus: 00:13:24 I think it might have even hit $3 or $2. It was bad. I mean, it really looked like Game Stop was on its last legs. Who could blame people for thinking that given it was a game store in the middle of a pandemic during an e-commerce revolution? I really could not think of a worse position to be in.

Lily Francus: 00:13:42 What's interesting, though, is this guy "Deep Fucking Value" just kept holding. People admired. He was down a pretty substantial amount of money. At varying points, he actually started ... I think right before one of Game Stop's earnings in 2019 so he did pull some money out at that point but he held through 2020, which was, again, the lowest point in Game Stop's history.

Lily Francus: 00:14:09 It didn't really start gaining traction until I would say early September/late September when another essential character to the story, Ryan Cohen, appeared. Ryan Cohen, people might know him as this guy who founded Chewy. He also made famous bets on Apple and Wells Fargo stock, which I believe turned out pretty well for him. He took this large position. There had been people like Michael Burry, famous from The Big Short, who were previously in Game Stop as well, but it really exploded in popularity when this new young eccentric billionaire character, similar to Elon Musk, was like, "I'm going to buy 9% of the company." People were like, "Okay, maybe now it is time to join 'Deep Fucking Value.'"

Demetri Kofinas: 00:15:01 Sounds like a catalyst moment.

Lily Francus: 00:15:03 It was. I mean, I talked about this in my post, a lot about this almost hero's journey where with the help of Ryan Cohen and these various catalysts that appeared, Ryan Cohen buying in, Ryan Cohen writing a letter to the board after I believe it was winter earnings. Game Stop going from $20 to $14 because they missed earnings quite predictably.

Lily Francus: 00:15:31 These were all points when people, not only joined this story, but also their faith was tested. It did turn out they were rewarded in the end. Nobody can deny that those initial investors at $4 probably made a ridiculous amount of money.

Demetri Kofinas: 00:15:49 Well, especially because they were using leverage. A lot of them were, at least. You're obviously touching on the narrative and it's so interesting because I can even tell speaking to you now for the first time, I could tell reading your writing on this but now listening to you as well, you really do enjoy the story component of this. I think what's also really interesting about you is you are unique in that you combine I think a deep appreciation, capacity, to analyze the qualitative narrative, story-driven aspects of this, the memetics that is, while at the same time you understand the market structure.

Demetri Kofinas: 00:16:27 One more question about this narrative thing and then let's get into the market structure because I want to try and help listeners separate the two and then combine them where necessary. Am I correct in understanding that this story went from being basically just, for most of the world, a story about an obscure ... Not obscure company but an obscure story in the sense that it was a financial stock that was pumping and there was a series of shorts that were squeezed out of their positions, the stock pumped higher, a lot of people made money, et cetera, it went from being that to now becoming this sort of social/political movement about power, corruption, the little guy, social inequality. Am I right that that's how the story has generally transformed over a period of a few weeks?

Lily Francus: 00:17:14 Yes. It's been interesting to see. A lot of it is I would blame the missteps of the financial system in general. The first hit was Citron. Citron Research, if you're not familiar, is the handle of a guy, Andrew Left, and he's a short seller. He's actually a pretty good one. I have jokingly been aligned a lot shorting meme stocks previously with him so stuff like Laser and Palantir and Nio.

Lily Francus: 00:17:44 But, people get pissed. I think, and I'll talk more about this, the hyper reality of things that we've talked about before this interview, people know these companies are overvalued. Nobody is going or few people are going to Palantir at $30 and being like, "Yeah. Something happened in the last two months, which made it worth more than the $10 where it started IPO'ing at."

Lily Francus: 00:18:08 You know, at the same time he also got kind of lazy with how he decided to short and, basically, went from these comprehensive reports, which was more like Muddy Waters or Carson Block, who does this research, creates these actual harmful stocks like Luckin Coffee or maybe IQ. He went from that to, "I know what's better for you. I tell you if this is worth $20" and Wall Street Bets and the internet were like, "Okay, you're wrong. Now we have a common enemy basically to crystallize against."

Lily Francus: 00:18:42 This was really reinforced when the Robin Hood fiasco ... We're still learning the story. I mean, the CEO of Robin Hood I believe went on Clubhouse with Elon Musk a day or two ago to give their side but the optics just looked bad. You had this group of people, which were like, "We are going to screw with this hedge fund" and regardless if Robin Hood and the other brokers just had a valid reason, it looked like the system was literally trying to screw people.

Lily Francus: 00:19:17 Because of that you've added this kindling to the fire that even if Game Stop dies and, as I talked about on Twitter, it really looks like the end of this bubble, you have these people who instead of just valuing it based on greed, are like, "No, this is actually unfair. I'm going to do this because it aligns with my morality."

Demetri Kofinas: 00:19:38 So interesting. One, I do want to discuss Robin Hood. It's still a little unclear what happened there but we can make some assumptions about it. The other point you made, and then we'll touch again on this later as well, about how people ... A huge part of this was not even about making money. I think a lot of people don't grasp ... Listeners may remember that I made this point to Ben Hunt in our episode with Ben and Grant Williams, which is that a huge part of this is about community and the lack of community and the capacity to find it online.

Demetri Kofinas: 00:20:08 A lot of these people post pictures of their accounts getting wrecked. You know? There's a sort of dopamine response function that isn't just about making the thrill of risking money but also the likes that you get from it.

Demetri Kofinas: 00:20:24 When you talked earlier on about how Game Stop had been this long value trap and I think you mentioned a few other of these stocks that maybe was Palantir, that clearly were overvalued by traditional metrics ... There's this fantastic video that I will link to in the summary section of the episode and, of course, it's in my rundown and I actually have pictures of it in my rundown. I'm sure you saw it, the Joker video about seven minutes long, right?

Lily Francus: 00:20:53 Yeah.

Demetri Kofinas: 00:20:53 Absolutely brilliant. Robert DeNiro's character, who plays basically the Johnny Carson of this show, turns to Joker and he goes, "You actually put your life savings into Plug and Fuel Cell. Have you checked their P ratio?" You know? The boomer fixated on fundamentals and cashflows.

Demetri Kofinas: 00:21:15 Let's focus in now on the endogenous factors. How much of the movement in your estimation of GME, of Game Stop, was driven by endogenous factors related to derivative contracts and positioning?

Lily Francus: 00:21:31 That's an interesting question. It's really open to speculation, which of course, this was speculation. I got a lot of flak on Friday ... When I published my blog post after that Friday, I talked about where in GME actually went from $40 to $70, that I argued that it really wasn't a short squeeze. The jury is still out. We've actually found that the short interests, at least according to I think S3 Partners recently, has dropped from about 130% to about 40%.

Lily Francus: 00:22:07 What that means is, of course, the shorts were squeezed. No question that the original people were shorted, especially those who were haughty enough or arrogant enough to basically short without coverage or on leverage. They were completely blown out. That said, when the initial movement happened, it was quite clear to me and a lot of others that this was due to option contracts. I'm sure a lot of your listeners have learned the words gamma squeeze in the last week.

Demetri Kofinas: 00:22:37 I'm sure people are going to need to get clear on that but continue. We'll explain what it is.

Lily Francus: 00:22:42 Yeah. It was clear that after a week of minimal movement, actually Game Stop declined I believe that week from about $40 opening on Monday to about $37 or $36, that there was a strong option component because it happened on a Friday.

Lily Francus: 00:23:01 This was not only reflected based on what's called the volume versus the open interest. Volume is how many options were traded that day versus open interest, which is how many options exist open at the start of the previous day.

Lily Francus: 00:23:17 You can see, for instance, if the volume is much higher than the open interest, that means there's a lot of options traded. You don't know how many of those were newly opened. You don't know how many of those were traded back and forth but you can kind of guess. In GME's case, it was very clear based on the shape of how the price was moving that it resembled a typical gamma squeeze because you started the morning with it pretty much flat. You then started seeing it slowly ramp up and in my post I argued that was largely due to puts expiring. I can go into what puts and calls are if we want to go, you know, at the basic level.

Demetri Kofinas: 00:23:56 Yeah. I mean, people are going to be scratching their head. They're going to say, "Gamma what?" There are I think three ... Well, volatility is also important here but three important components or important Greek letters. One is delta, one is gamma, and then theta as well. What is a gamma squeeze? Explain to our listeners how that relates to delta, what is gamma, and what is theta. We're talking about put and call options and tell people what those are as well for people who don't know.

Lily Francus: 00:24:23 I'm going to start with the complete basics here. An option is effectively a promise between one party and another party to buy yourself stock at a certain price at a certain time. At least, we're talking about vanilla options on equities.

Lily Francus: 00:24:39 For instance, a call option gives the person who has longed it, or the person who bought it, the option to buy a certain stock at a certain price on a certain date. What that means is that for an American option, you can actually exercise it or turn in your notes or promise early, if the option is what's called in the money.

Lily Francus:	00:25:05	An option based on this promise format consists of two things. It consists of a strike and it consists of a tenor or a, most people online call it, date or an expiry.
Demetri Kofinas:	00:25:18	A strike price and an expiration date.
Lily Francus:	00:25:22	Let's say Game Stop is currently trading at $40 and I buy a call option at $60 that expires on the 19th of February. What that means is if Game Stop goes above $60 before then, I could go to the person who wrote that contract and say, "You need to sell me 100 shares of Game Stop for $60 each." A total value of $6000 basically.
Lily Francus:	00:25:52	A put option is actually the opposite. Instead of saying, "I want to buy at a certain price on a certain date" it gives you the option to sell at a certain price at a certain age. In this example, if Game Stop is trading at $60 I can buy a put option for $40 on 219, which effectively says no matter what Game Stop's price is before 219, I have the right to sell you this at $40 a share.
Lily Francus:	00:26:25	You can already see where this is going. When you're bullish, when you believe a stock is going to go up in value, you're going to buy a call option because if Game Stop, let's say, becomes $80 a share by the expiration, then you go to the person who wrote the option and you say, "You owe me 100 shares at $60." Then you could go literally right then and there and sell those shares for $80. You've made effectively a $2000 profit.
Demetri Kofinas:	00:26:54	You can sell the underlying security into the market and pocket the difference between what you paid for the security because you exercise the options contract and what you sold it for on the market because it was trading above the strike price.
Lily Francus:	00:27:07	Exactly. That's true for a call option. For a put option, it's the opposite. Effectively, that's when you're bear-ish. A lot of people use put options as hedges for what are called long positions. Let's say, I have 1000 shares of Microsoft and it's currently trading around 240, I could say, "I am afraid Microsoft is going to go down 200 because maybe their earnings are bad." If I was sure of that conviction, I could buy 10 put options for $230 and then in case Microsoft folds to 200, I still have the right but not the requirement to sell you my shares at 230.
Lily Francus:	00:27:52	What matters here is that speculators use these options, which were originally ... They're kind of an insurance contract. That's the whole point of options in general. They're really historically for insurance. Speculators use them to not only make money on these bets without putting up old capital for buying shares but also because of the convex payout.
Lily Francus:	00:28:19	What that means is a convex payout is that it's non-linear. If I am very bullish, let's say Game Stop is trading at $40 and I buy a $60 call option, that's considered very out of the money. Meaning that I think to even make my contract worth value, Game Stop needs to go up in value very fast and also a lot, 50% to be in the money.
Lily Francus:	00:28:47	What happens, though, is that these contracts are sold normally, especially in the context of call options on single stocks because I'm not going to get into indices here, call options on single stocks are normally, especially on the meme

stocks, sold by what are called market makers, which are these usually institutional players who their motive is to provide liquidity to the options market.

Lily Francus: 00:29:13 What they do is ... They don't want risk. Ideally, a market maker will only make money because they sell to you at the ask and they buy from you at the bid. They're happy to do this because they're making effectively free money if there's no risk because they can go around and just whatever that difference is, times as many contracts as they process, that's their profit.

Lily Francus: 00:29:38 Because options have a non-linear payout, when a market maker or, honestly anybody, writes this option contract and sells it to somebody else, they ideally want to hedge it. When you head an option, there's really one good way, especially on these single stock meme stocks, and that's you buy and sell the underlying shares.

Lily Francus: 00:30:01 The reason for this is this concept called delta, which I talk about a lot on Twitter. It's related to gamma, which is the gamma in gamma squeeze. Effectively, delta is a hedge ratio. If an option contract is one delta, what that means is it effectively has the payout or the exposure to the market of one share. An option contract can be up to 100 delta and it increases asymptotically until it hits basically in the money or when it passes the strike price.

Demetri Kofinas: 00:30:37 Another way also to think about it is the delta of an option is the probability of that option being in or out of the money at the expiration date.

Lily Francus: 00:30:45 Exactly. There's a lot of different ways to understand delta. That's one rough approximation. There's also that this is how much the option price should move based on a dollar change in the underlying but for the story, the more interesting one is this is how much exposure the other side has or needs to hedge out to basically write your option without blowing themselves up.

Demetri Kofinas: 00:31:10 The higher the delta, the more they need to hedge.

Lily Francus: 00:31:13 Exactly. What's interesting about delta is it doesn't move like a straight line. It has the, like I said, convexity so as the option gets closer to in the money, it starts accruing not only more exposure to the underlying in terms of value but the delta actually goes up. The reason for this is the derivative of delta, which is the exposure of delta to changes in price, is gamma. That's where the gamma in gamma squeeze comes from.

Demetri Kofinas: 00:31:46 Right. It's super important because a lot of these folks on Reddit were speculating with short-term call options where the closer you get to expiration, as well as the closer you get to the price but in this case I think the theta component was a big part of the driver. Explain the relationship between gamma and delta for people. We're going to try to do our best here but it's kind of difficult. I'm no expert on options and derivatives but I want to try and do our best here because I think a lot of people struggle with this.

Lily Francus: 00:32:16 Definitely. Gamma is basically the little sister of delta. Gamma is what makes options fun for most people because you, let's say, buy a very out of money option. A lot of people in the day trading community call them lottos, a lot of people do it for earnings or these binary events where you either lose all your money or make a lot of money.

Lily Francus: 00:32:41 The reason for this is that if, let's say, the stock price spikes up a lot then gamma starts increasing the delta rapidly. You could start buying a one delta option, which maybe is like 10 cents or $10 because it's times 100, and because you guessed the direction right, you guessed the magnitude right of the move, it becomes in the money. This could happen for a 7% move in the underlying, instead of just making 7%, let's say, buying the stock, you've now made 20 times what you put in or 50 times what you put in.

Lily Francus: 00:33:19 It really appeals to people with not a lot of capital who have a lot of tolerance for risk because when you go long an option, when you buy it from somebody else, the amount you can lose is capped. You pay them what's called the premium, which is this amount of money is the most that I'm at risk for but I could also make a lot more money.

Lily Francus: 00:33:43 At the same side, the person who sells it, they collect that money and, ideally, your option goes to zero and they just made money. Sometimes, especially if they don't hedge, they're on the hook for an infinite amount of money. That's what makes it more interesting because options have what's called implied leverage so because of this delta and this hedging ratio, they effectively represent this contract to continuously hedge this position of underlying shares. When an option gets really in the money, so let's say the strike is 60, now Game Stop is 400, then your option contract effectively has the same rough valuation as controlling 100 shares of Game Stop.

Lily Francus: 00:34:30 That's basically due to gamma. You started with a one delta position. As it went up in value, the delta starts decreasing so now it's a five delta position. As it increases more, it's now a 20 delta position. Then eventually if you got really lucky it's 100 delta.

Demetri Kofinas: 00:34:49 Right. If the option goes in the money. What role did options buying by retail investors and positioning and the use of leverage, both explicit and implicit, play in the events of the last few weeks? How does this factor into the retail broker Robin Hood's decision to suspend trading in certain story stocks, including GME?

Lily Francus: 00:35:15 I'll get into that part about Robin Hood last but, effectively, what happened or at least my take on it, and I think this is pretty much widely accepted at this point, is ... This was now two Fridays ago. GME was pretty stable that week. It had actually opened up on the prior Monday at like 50%, which was pretty substantial. After that, it just stayed stagnant for a couple days. This was actually when Citron published their hit report and Wall Street Bets went to war with them.

Lily Francus: 00:35:50 What effectively happened was when Citron published their report, what's called an unusual option sweep, which was actually detected through Unusual Whales, which is one of these services, he's also a friend of mine so love the guy, he detected I believe through his sweeper that, looking at these option flows about $1 million worth of puts opened on GME when Citron published their report.

Lily Francus:	00:36:20	This is a public feed. Not only he detected it but this is all public open data so everybody who could see sweeps saw that a million dollars' worth of puts hit GME, which was a very bear-ish bet meant to tank the stock, and then Citron's report came out like minutes later.
Lily Francus:	00:36:43	What happened was it was basically a full-on war between Wall Street Bets and Citron. People were buying shares, probably buying calls. It wasn't doing much to move the stock because, and I'll talk about this more later, retail doesn't have as much an effect on this as they probably thought they did but what's more interesting on Friday is a lot of these put options ... When you buy an option, it's effectively a promise of possibility. If you buy a put at, let's say, 30 and Game Stop at 40, over time, the opportunity of Game Stop to move to $30 diminishes because you have less time remaining on your contract. The value of the contract --
Demetri Kofinas:	00:37:28	Yeah. The delta declines.
Lily Francus:	00:37:30	It's actually not only does the delta decline, which is this concept of delta decay or charm, which is the second derivative but the price of the option contract also declines. The delta decline is related to theta, which is the price of the option diminishing but what's interesting in the Friday case, the initial Friday where GME exploded, was that a lot of these options had what's called a zero day's expiration.
Lily Francus:	00:37:58	Zero days are ... There's a lot of choice words I think they use to describe them online but they're basically lottery tickets. Effectively, you either go home rich or you go home broke. There's really no in between because on the zero day of the contract there's so little value remaining and as you tick closer to the mark closing, the value exponentially decreases.
Lily Francus:	00:38:25	By midday, on a zero--
Demetri Kofinas:	00:38:26	Was people's ability to buy ... The fact that they were buying zero data exploration options, how important was that in the strategy of the subReddit to drive the price up? Because they could, effectively, drive it up in a day and they could buy these options super cheap and exercise them in the money, because they managed to get the stock price up so quickly? Is that a huge part of how this worked?
Lily Francus:	00:38:51	I mean, it is most likely what happened on Friday. This was I think the 15th of January. I don't think it was cooperative. I think it was just people took advantage because what was happening was these put options were bought on GME and they were expiring or losing delta, which meant that the people who wrote the contracts could then go back and buy GME stock, which was pushing the price back up.
Lily Francus:	00:39:17	People, speculators, not only on Wall Street Bets but everywhere, saw GME going up and took this bet that it would continue to go up parabolically because that's what it had been doing previously. They bought these cheap zero days, which had certain delta, but when you buy them together what happens is that the market makers who wrote you the contracts need to keep buying shares and when you keep buying shares, they keep pushing up the price, which keeps pushing up the value of other people's contracts, which keeps pushing up the

price more, which keeps basically encouraging more people to start buying in because they're seeing the stock go up parabolic and they're saying, "I want to make some money today."

Lily Francus: 00:40:03 You get this virtuous cycle where there were some small initial movement, mostly driven likely by normal speculation, buying pressure, some shorts closing out, put hedges being unwound, and then you get this parabolic cycle that people buying in, which caused the price to go up, which caused more buying in, which caused the price to go up more.

Lily Francus: 00:40:27 One of the tell-tale signs here of the gamma squeeze was that GME's price on the day settled around the highest strike price available on Game Stop, which was $60. What happens when an option goes into the money is that it doesn't really have much gamma anymore. Once it hits 100 delta there really isn't much it can do to change the price because you're already controlling the maximum amount of shares it could have.

Lily Francus: 00:40:58 When that happens, you get this concept of the people that own these option contracts, who wrote them for you, the market makers, they're what's called short delta. In the state of short gamma, they start selling these shares. When they start selling the shares, the price goes down but then people are still buying in because they're like, "Okay, it might go back up." Eventually, you get this equilibrium where it started to settle around the gamma point of no return, which for that date was $60.

Demetri Kofinas: 00:41:37 Okay. I want to make sure we get to the narrative component of this story. Maybe it would be best to just ask you directly, what do you think the big picture story here is that a lot of people are missing?

Lily Francus: 00:41:49 I mean, I think there's a couple things people are really missing. This is what I see most on the news. One, this idea of retail mania. Like, yeah, it is, of course, a retail bubble. No question about that. You can see that just based on the growth of Wall Street Bets, the subReddit.

Lily Francus: 00:42:07 We have pretty strong evidence, and I talked to a lot of people on financial Twitter, that most of this movement is not driven by retail. The initial movement was. There are a lot of firms out there, a lot of high frequency firms, in particular, that have algorithms that are designed to scout for momentum stocks and basically ride these trends. When you get this frenzy, a lot of the heavy movement is done by these firms, which zoom in and out of positions and bid up the price to this extraordinary amount.

Lily Francus: 00:42:41 I think a lot of, especially the movement this past week, was mostly driven by these algorithms, by these large institutions rather than this narrative that, "Oh, this is just a war between the good retail and the evil hedge funds." It's like, no, there are hedge funds on both sides playing you both for fools.

Demetri Kofinas: 00:43:03 The subReddit was kind of like the igniter.

Lily Francus: 00:43:03 Exactly.

Demetri Kofinas: 00:43:04 It lit the fuse but it was all the opportunistic money flooding in that really provided the gasoline for the punch.

Lily Francus:	00:43:11	Exactly. I mean, no question it would have gone up some degree just by retail alone but we've found evidence that retail is maybe like 20% of the driver here. There is a short squeeze component, as I talked about briefly before. I do not believe it was the initial driver of momentum but, of course, as the stock went up in value astronomically, shorts do get blown out. That's not something that anybody questions.
Demetri Kofinas:	00:43:40	Yeah.
Lily Francus:	00:43:40	We're seeing now that the short interest is probably closer to 40% or 50%. Most of the shorts learn their lesson.
Demetri Kofinas:	00:43:49	Yeah. Yeah. There's also this weird ... Let's just free flow now and it'll give us a chance to really get into the most fun stuff here, which is the narrative component. One of the competing narratives, as I said, there's a kind of narrative war going on and a lot of people are pumping their own narratives, pumping their own interests, whatever it has to be, and one of those narratives is that there are evil short sellers out there and that what this really was partly ... Not only was this taking it to the man, so to speak, but the man was partly people that were short, short Game Stop and by extension, short in general. That if your short companies, your short innovation, your short entrepreneurialism, et cetera, et cetera.
Demetri Kofinas:	00:44:36	I think there's something else to it now ... I'm just thinking out loud here but I'm curious what you think about it. I noticed when the story started to really pickup traction that certain ... How would you call them? Cultish, popular, pop cult billionaires went on CNBC and basically led what sounded like or trying to lead what sounded like a populist revolt.
Demetri Kofinas:	00:45:05	When someone like Chamath went on CNBC, to me, it sounded a lot like Donald Trump. It sounded a lot like Donald Trump during the Republican primary and the sort of Steven Cohens and Ken Griffins of this world were kind of like the Jeb Bushes, right? The establishment.
Demetri Kofinas:	00:45:26	It's interesting to me because it seems like there's a lot of bleed from what's happening in American politics to what's going on in financial markets. I wonder if you've picked up on that at all.
Lily Francus:	00:45:36	I did. Actually, I talk about it a lot with my stuff with about memetics. It's really ... I mean, at least my view is the same source. When you have this market, which we'll talk about this more later, is so driven by the narrative and so driven by the idea of a meme and not the internet meme but literally the Richard Dawkins level understanding about meme, then it makes perfect sense because these billionaires, Chamath and Elon, are attached to these storybook stocks. [inaudible 00:46:07], Elon has Tesla and I talk a lot about Tesla in the sense of the God meme.
Lily Francus:	00:46:13	I don't want to, of course, mix any enemies here. I do think that they both inserted themselves in this narrative as this way to propagate their own you know --
Demetri Kofinas:	00:46:28	It was very opportunistic. Very opportunistic.

Lily Francus:	00:46:29	Exactly. It was done in a very calculated way. Do I agree with what they did? Absolutely not. I think we're seeing today the ramifications that when these billionaires who they may have invested some in Game Stop, at this level, it's literally what people would call YOLO for them. They don't care if they lose money. It looks good. Their stock price will pump just because people have this salient recognition of them.
Lily Francus:	00:46:57	But real people followed them and that's the danger here. There should have been warning klaxons for people that they should have a social responsibility here to warn people this is a bubble, this will not end well. This will end well for a few people and a lot less well for a lot of people.
Lily Francus:	00:47:17	I think it's a problem. A lot of people try to score these easy points with these stories and it's very feels good and it makes them seem like, "Oh, we're not the bad billionaires. The other people are the bad billionaires."
Demetri Kofinas:	00:47:31	Exactly. Donald Trump. Donald Trump when Chamath was on with Scott Wapner, Scott looked bewildered. I feel like that's partly because there's been this kind of revolt that these guys are trying to lead. Again, in a very populist way you see it also with Davey Day Trader, that's another phenomenon. I mean, he was brilliant in really taking advantage of the crowd and leading people over the summer with that whole stonks investing thing.
Demetri Kofinas:	00:48:01	What do you think this says about where we are today and the way in which people are investing? I've talked about it as a rise of what I call market nihilism. Is there an embrace among millennials that you're seeing in some of these online forums? An embrace of the idea that value is totally dead, nothing matters, Jay Powell has the money printer, go brr, and the only thing that matters is basically the pump?
Lily Francus:	00:48:30	I mean, of course, yeah. I mean, in general, I would argue all three of these people, you said Davey Day Trader, Chamath, Elon, they have a vested interest in keeping up current with the media and being salient in people's minds because those people, mostly subconsciously, when they look for stocks will keep their stocks in mind. I'm not saying that's their only motivation here. I don't even know if that's their conscious motivation here but, in general, we're seeing over the past year that the most salient stocks win. It doesn't matter what their P is, it doesn't matter what their cashflow is. A lot of the initial volume investors in Game Stop were like, "Oh, but they have $750 million in free caps." No, dude. Nobody cares about that. Literally nobody [crosstalk 00:49:18] at $400 a share is buying Game Stop because their cashflow is $750 million.
Demetri Kofinas:	00:49:24	If you say that, they're going to call you a boomer.
Lily Francus:	00:49:27	I mean, basically.
Demetri Kofinas:	00:49:28	Which is a fascinating sort of putdown because you don't have to actually be a baby boomer to be called a boomer. As I understand it, a boomer is basically someone who doesn't get it, who is basically living in the old paradigm but there's a new paradigm and there are new rules and narratives really do drive that.

Demetri Kofinas:	00:49:45	I've seen that time and time again, not just in some of these story stocks like Tesla or most recently with Game Stop or with Hertz, just a temporary kind of pump that it had, even though it was in bankruptcy, which was wild, but in crypto assets, in cryptocurrencies as well.
Demetri Kofinas:	00:50:04	You mentioned salience. You have this really interesting model that you use to analyze story stocks and these types of companies. One aspect that's relevant is salience, which is kind of like the memorability of something. You have something else you call catalysh, which you'll have to explain to me, and also humor. How does your framework work for evaluating stocks that you think are poised to benefit from this kind of narrative flow?
Lily Francus:	00:50:30	Effectively, you need to have this pulse on the trend. I'm looking at ways to quantitatively model it. As I mentioned in my post, it's very difficult because a lot of these patterns that humans get intuitively, good luck writing an algorithm to actually model it. I think a lot of quant firms have been stuck for years trying to figure out good ways to do semantic modeling.
Lily Francus:	00:50:53	This actually came to me a lot in the last couple of days with the idea of a silver squeeze. When you look at Game Stop or when you look at Tesla, they have a lot of resemblance. In my post, I mentioned too, the mono myth, this hero journey of Joseph Campbell where you start with this protagonist, who Tesla, for instance, because they have Elon. He went through trials and tribulations. They almost went bankrupt in early or late 2019 I believe with Model Three.
Lily Francus:	00:51:26	They came out victorious against these short sellers. Short sellers are often cast as the villains in these storybook stocks because, even though, they're on the side of common sense, nobody ... I get a lot of flak for this but nobody could value Tesla properly by any known valuation metric.
Demetri Kofinas:	00:51:49	Yeah.
Lily Francus:	00:51:49	You really need this idea of the story, this narrative, that has this attachment to a basal human emotion, as I talk about, which in Tesla's case, this idea of futurism or a better future. Elon and Tesla have heavily benefited from Elon's continual mad scientist-y plans to get humans on Mars, build these tunnels that connect between cities. None of these really have --
Demetri Kofinas:	00:52:16	Upload your brain to the Cloud.
Lily Francus:	00:52:18	Exactly. Time will tell if he does any of this. Of course, SpaceX is a real company doing real things. A lot of what drove Tesla's stock I'd argue was this idea that I am not only banking on the chance to make money through this but I am committing the moral action to enhance humanity's future.
Lily Francus:	00:52:41	That's why Tesla has so many rabid fans. It isn't because they're analyzing cashflows or trying to come up with logical models to value it. It's like, no, this has an emotional attachment for people. You saw a lot of the same thing with Game Stop.
Demetri Kofinas:	00:53:00	But how do you measure that? You call Tesla a God meme in your writing because of just how powerful it is and you use this metaphor, you stretch it to describe also a blast radius that you can see that in cases like the success of

		Kathy Woods Ark Invest, I mean, some of these other knock-off EV companies, which is really fascinating. It makes sense intuitively but how do you measure it? How do you quantify this?
Lily Francus:	00:53:26	I think that's the trillion dollar question, right? It's very easy as a human to say when you see it. Like you said, it makes sense intuitively, this model of semantic network where stocks that have this strong or even weaker associations with the Tesla narrative are benefiting when Tesla does. I mean, we saw last week Tesla not only missed earnings but more importantly, was dethroned for some time by Game Stop. Stuff in the Tesla bubble like Ark Invest, like [inaudible 00:53:59], like EV companies in general, battery companies, they all went down because all these cashflows were moving from Tesla to the next God meme, as I call it.
Lily Francus:	00:54:12	How does one quantify it, you know?
Demetri Kofinas:	00:54:15	Dogecoin. [laughter]
Lilly Francus:	00:54:16	Dogecoin. How does one quantify it is a great question. I mean, I am personally going to look into various strategies. I think the most obvious approach is when one of these God meme appears, whether on Wall Street Bets or on Twitter or whatever, you can look at how it impacts other stocks in its radius. It follows a pretty well established pattern, which I talk about in my blog post, that it could not only vary in proportion so, let's say, God meme is silver. In silver's case, we would expect that fairly instantly the miners would go up. They did.
Lily Francus:	00:54:56	Let's take a step further. We would see that other precious metals should start rallying too. We saw that. We saw gold. We saw platinum. Now let's take it a step further, let's say there's more money still inflowing. Where would it go? Okay, other metals. You saw yesterday, for instance, American steel rallied for no reason.
Demetri Kofinas:	00:55:15	You would need a lot of data across a lot of different asset classes and over a wide time period to be able to determine if this is actually a persistent phenomenon.
Lily Francus:	00:55:28	Yeah. I mean, I'm looking at it more from that ... Instead of trying to semantically model it, you can look for these correlations that appear in the market data itself. Instead of trying to piece together, let's say, an SCC filings and Wall Street Bets lingo, you can look at it from the perspective of how do these stocks move together? Are they linked? You can see this through pretty much basic signals analysis. These correlations do break down over time of course. I think one of the major things to look for if you do try to monetize the strategy on this is really understanding are these correlations spurious?
Lily Francus:	00:56:06	You do want some method of once you identify these baskets, you want to identify the centroid or the God meme here, you want to identify is this a real semantic relationship? For instance, if you just look at one day, you might think that Tesla and private prisons are directly correlated, rather anti-correlated. They are through a semantic association here, which is the blue way, you know this idea of a democratic narrative to the market but they may not be in a couple of months.

Lily Francus:	00:56:43	There's a lot of data filtering. I do intend to work on this more once my primary model is in a good place, which is the NOPE. It is a good way to analyze these stocks whether you're an institutional investor or an individual investor because a great example with Game Stop was, you know, when I saw this new God meme occurring, we have this idea of a blast radius. A ton of money was pouring into Game Stop. Where does it go when Game Stop gets too rich for people's blood? It goes to, first, other shorted stocks, which in my model I call the L1 or level one. It then goes to, let's say, the other distressed retailers, which are the L2. It goes to products that Game Stop may carry. It goes to other companies that are related to the central characters of the narrative.
Lily Francus:	00:57:43	A great example I actually posted on Twitter during the Game Stop story was this company Designer Brands. It was similar to Game Stop in a lot of ways. It's not heavily shorted but it's a distressed retailer that the stock price was very much dampened still from pre-COVID but what's more important about it was its affiliation with Michael Burry, who was the central character in the Game Stop story.
Lily Francus:	00:58:09	Based on this association, I said, "Okay, Michael Burry must have made a shit on off Game Stop. Other people will now look at his 13F, which for [inaudible 00:58:21] they will look for it to find other stocks which will replicate the Game Stop story. Which stocks here could replicate the next Game Stop?"
Lily Francus:	00:58:32	From that, I ended up doing a bunch of digging, I pulled out Designer Brands.
Demetri Kofinas:	00:58:38	A couple questions. One, is this a thing where you're obviously looking to consciously predict where people are going to go in the event that the opportunity in a particular stock has been depleted, at least temporarily, and they want to find a similar opportunity in a different stock? Is that correct?
Lily Francus:	00:58:57	Exactly.
Demetri Kofinas:	00:58:58	Okay. You're doing that consciously. The question is are the people whose actions you're attempting to predict, is your assumption, your working assumption, that the vast majority of those people are subconsciously moving from one stock to another? Or is there a conscious behavior that has developed within the online internet culture community in finance and stocks where they actually are doing the same thing that you're doing?
Lily Francus:	00:59:23	It's honestly impossible to tell. I would argue it probably doesn't matter too much if it is conscious or subconscious for other people. A pretty common example [crosstalk 00:59:32].
Demetri Kofinas:	00:59:32	This is like massive momentum play.
Lily Francus:	00:59:34	It is. A common example, and this is not even a new concept, it's really it originates with John Maynard Keyes, one of the fathers of modern economics, Keynesian Beauty Contest, how are stocks valued? Do we value them based on what we think they're worth? The answer is usually no. We actually value it according to what we think other people think they're worth.
Demetri Kofinas:	00:59:57	Right.

Lily Francus: 00:59:57 What's more interesting about that is you could take it a step further and you would say that a rational actor in this system would act the same way as you. Everybody who is buying a stock or selling a stock is trying to predict what other people are thinking [crosstalk 01:00:14].

Demetri Kofinas: 01:00:13 Right. Here's a question for you ... No, completely. You talk about reflexivity in your work. It's something I've talked about on this program before. Reflexivity depends on the existence of a fundamental sort of empirically discernible reality, which ultimately works as an anchoring mechanism for expectations.

Demetri Kofinas: 01:00:37 I feel like what we're describing here is the reflexive loop, the momentum, right? I don't know. I'm trying to discern basically ... A lot of people ... When I go on different internet forums or when I get invited to some like Discord channel or I'm on a Telegram channel or someone's DMing me and telling me, "Hey, everyone is talking about Chainlink right now. It's all over Reddit. It's going to pump." I'm like, is this the new kind of ... There's this perception on many in crypto, in particular, because of the nature of the assets, the fact that they're financial, that adoption or pumping something is the same thing as it having value. You know? There's this conflation between underlying value and hype.

Demetri Kofinas: 01:01:25 Do you see what I'm saying? Does that make sense?

Lily Francus: 01:01:29 Mm-hmm (affirmative). Yeah. I mean, I think that's what I talk about a lot with this idea of the narrative loop. It's really that there's a catalysh. I don't say catalyst because that's often not even real or necessarily based in reality.

Lily Francus: 01:01:43 It's really based on this understanding that people think that ... When you see these meme bubbles, and a great example of this actually is like Workhorse Motors early in the summer or Nikolai, there's always something in the future that people can believe will provide value for what they're doing. Nobody likes to admit to themselves that this is a pure mania play and you say that heavily with Game Stop. I mean, that was the whole adoption of the short squeeze narrative plus the value angle.

Lily Francus: 01:02:11 If someone put a gun to my head and was like, "Why Game Stop? Why now?" It would be that basically. It was spurred by Ryan Cohen joining the board, catalyst number one. It was spurred by the holiday season and this belief that consoles would somehow save the ailing retailer, catalyst two. The overarching fundamental belief was, okay, there is this event in the near future that I could make a lot of money off of, ergo, I can justify to myself these inflated prices.

Lily Francus: 01:02:43 You saw this with Workhorse with the UPS contract. You saw this with Nikolai when they got this sham contract that never happened. It's this idea that there is some kernel of truth here, which people latch onto. It doesn't need to be an actual truth. It can be completely false. With that, people will justify this reflexive loop to themselves.

Demetri Kofinas: 01:03:10 Yeah. It's super interesting. I strongly recommend for listeners to check out your work. What's the URL of your blog, Lily?

Lily Francus: 01:03:17 Nope_its_Lily.Medium.com

Demetri Kofinas:	01:03:26	Yeah. I have a lot of stuff from ... I pulled a lot of quotes from all your different posts that were relevant to this story. There were actually five but you have written a lot of other stuff as well and I put a lot of that stuff in the rundown. I also have a lot of images from your posts and a lot of really, really funny interesting memes from the internet related to this story.
Demetri Kofinas:	01:03:47	What interests me in this is because I do feel like there is this weird hyper-reality that we're living in right now and also, again, I mentioned it earlier, this nihilistic component. I feel like people going and buying Doge coin is a perfect example of that. It's an absolutely worthless thing that was created as a joke but everyone's not just doing it, they're embracing it. It's a really weird thing.
Demetri Kofinas:	01:04:11	A lot of people on the internet and social media have been trying to suggest that it's a wonderful thing, that all values are arbitrary and so it doesn't really matter what you buy. But, again, that shows a fundamental I think lack of understanding about what the role of financial markets ... Like why financial markets are there. They're not there for us to gamble. I know that a lot of people gamble in financial markets but that's not why we have wheat futures. We can speculate in wheat futures all you want but they actually play a really important role in the underlying economy and helping to act as a signal for supply and demand of a really important food staple.
Demetri Kofinas:	01:04:51	I think, ultimately, this derives from the fact that we've made money free and that people have lost faith in the institution of money as well. They just basically see stocks as all stonks and just it's all about the pump.
Demetri Kofinas:	01:05:06	Anyway, Lily, I really appreciate you coming on. For everyone listening, in place of the overtime, I'm recording a segment with Ash Bennington, senior editor and crypto editor at Real Vision, next who also, incidentally, had Lily on Real Vision's daily briefing and who also hosts his own podcast. That's going to be available on the overtime feed in time for this episode's publication.
Demetri Kofinas:	01:05:32	If you aren't a subscriber yet to our premium content or have access to our private RSS feed, that's not a problem. You can just scroll down to the bottom of the summary page to this episode and click on the link that says Patreon.com/HiddenForces. There's also a link to our website at HiddenForces.io where you can explore our content library and sign up to the podcast mailing list.
Demetri Kofinas:	01:05:59	Lily, I want to give you the last word here. Do you have any closing remarks you want to make or anything you want to add?
Lily Francus:	01:06:06	Definitely. I mean, I guess the last remark on what you just said is I completely agree. There is an awesome post written by my friend Andrew on this as a follow-up to my series on trading salience about hyper-reality and this idea of stocks.
Lily Francus:	01:06:19	I think a lot of it does relate to this idea of economic anxiety, especially among my generation. A lot of people when pressed to the wall on why they do this, everybody understands it's a bad idea. Nobody sensibly thinks GME is worth $468 a share. Nobody is gambling the markets because they're completely unaware of what's going to happen and what the risks are.

Lily Francus: 01:06:44 It's really people believe that this is their only chance to economic salvation. A lot of people do this, and I've seen multiple stories because I have run a Discord on this and talk to traders a lot, a lot of people are in the markets for very dangerous reasons. I do intend to write more posts on how speculation, by itself, is, as I call it, fucking up the marketplace but I do just want to leave your listeners with this, that this is a cultural concern.

Lily Francus: 01:07:17 We've created a system where a lot of people feel pretty much consigned to a social caste and they're seeing this as their grand opportunity to get out. If you look at it through that lens, it's completely natural what is happening, I would argue.

Demetri Kofinas: 01:07:31 Yeah. Yeah. Totally agree with you. Lily, thanks again for coming on the program. It was great speaking with you.

Lily Francus: 01:07:37 Thank you for having me.

Demetri Kofinas: 01:07:39 Today's episode of Hidden Forces was recorded in New York City. For more information about this week's episode or if you want easy access to related programming, visit our website at HiddenForces.io and subscribe to our free email list. If you want access to overtime segments, episode transcripts, and show rundowns full of links and detailed information related to each and every episode, check out our premium subscription available through the Hidden Forces website or through our Patreon page at Patreon.com/HiddenForces.

Demetri Kofinas: 01:08:17 Today's episode was produced by me and edited by Stylianos Nicolaou. For more episodes, you can check out our website at HiddenForces.io. Join the conversation at Facebook, Twitter, and Instagram at Hidden Forces Pod or send me an email. As always, thanks for listening. We'll see you next week.