Inside the Game: Unlocking the Consumer Issues Surrounding Loot Boxes – An FTC Workshop
August 7, 2019
Segment 2
Transcript

PATRICK: We'll present recent academic research about loot boxes. This afternoon's panellists include David Zendle from York St. John University, Andrey Simonov from Columbia University, Adam Elmachtoub, also from Columbia University, and Sarah Domoff from Central Michigan University. As with the prior panels, each of you will have the floor for about 15 minutes, and then we will move straight on to a moderated discussion.

We're running a little bit behind, so please try and keep to your allowed time, and don't get offended if during the moderated discussion session if I have to cut you off. As a reminder, there are comment cards. If you'd like to submit a question to any of the panellists, we have a paralegal. You can raise your hands, and the paralegal, Emily, will come over, and she can take them, and we'll submit them. OK, without further ado, David, let me turn the podium over to you.

DAVID ZENDLE: OK, thank you. OK, hello there. My name is Dr. David Zendle, and I'm one the world's leading experts in the potential for harm present in loot boxes, something that hasn't really been covered extensively so far today. And if you're wondering what it looks like to be one of the world's leading experts on this, this is a subset of the journal articles that I've published on the topic this year.

They are in What you call Q1 journals, which only take the most scientifically valid research. Please, believe me what I say I'm an expert about speaking from a position of authority. The stuff I'm saying today is real, and it is very worthy of your consideration.

There's one clear message that I want to get across today, and it stands in stark contrast to everything we've heard so far, or mostly everything we've heard so far. The message is this, spending money on loot boxes is linked to problem gambling. The more money people spend on loot boxes, the more severe that problem gambling is.

This isn't just my research. This is an effect that has been replicated numerous times across the world by multiple independent labs. This is something that the games industry does not engage with.

Today, I want to talk about this link, and I want to talk about why you should care about it. The reason you should care about it, are the two words, problem gambling. Problem gambling refers to an excessive a disordered engagement with gambling activities that is typically outside of the gamblers volitional control.

It is incredibly harmful. It's linked to depression and anxiety. It causes financial distress, the destruction of families, and most importantly perhaps, it leads to people taking their own lives.

Problem gambling is the reason why some parents come home at night to find that children are not there. This is so important. It's not something we should trivialize, or laugh at, or compare to baseball cards. This is life or death.

That's what I'm here to talk about today. So the reason why problem gambling is such a big topic when it comes to loot boxes, and why people care about gambling and loot boxes, is because loot boxes look so much like gambling. Both when you're playing on a roulette wheel or while you're opening a loot box, your wagering something that you have in your hand of value now on the uncertain hope of getting something of greater value later on. It's that reason that loot boxes have tripped gambling regulations in a couple of countries within Europe, because of those formal similarities, and because of those formal similarities, people are a bit worried for a very long time that loot boxes by act as a gateway to problem gambling, particularly amongst young and vulnerable populations.

We set out to find out more information about this. We went to-- we start out go to large samples of gamers, big, big samples of gamers, and we found out how much they were spending on loot boxes. And then we measured their problem gambling severity using a standard instrument from the gambling literature, called the Problem Gambling Severity Index. it's very commonly used, very well known for predicting real world things.

And what we found, was this. So this is the first time we found it. Again, this has been replicated many times across the world. This isn't a new effect. We've known about this for a while.

You've got people who have no gambling problems. And they tend to not spend much money on loot boxes. And then as people's gambling problems get more and more severe, they spend more and more money on loot boxes. And the effect associated with this is something that we call clinically significant, meaning that it's large enough that people should maybe take notice of it. And you see it again, and again, and again, and again.

Now, some people might say, OK, you've got a link between how much people are spending more money or boxes and they're more severe problem gamblers, does that show that loot boxes are a gateway to problem gambling? That is one interpretation to this effect. I'm going to go through others.

But it's the interpretation that fits with the theory of how problem gambling develops. We know that one of the main pathways to problem gambling is a process of conditioning, whereby the gambler comes to need and expect the excitement associated with the gambling win. So what we think-- one of the possible explanations for this effect, is a situation in which people are buying a loot box, getting excitement, buying a loot box, getting excitement, buying a loot box, getting that reward, getting that hit, going out into the real world, seeing something that has many of the formal characteristics of the loot box, like a slot machine, and that conditioning transfers over. So therefore, spending money on loot boxes, literally causes people to engage in gambling, leading to problem gambling.

However, one thing to note about this, is that it's a correlation. And because of that, we can't determine the direction of causality from it. We won't know this director of causality for many

years, by which point, one could argue, damage has been done. This might also indicate a relationship that flows the opposite way, where people who already have severe gambling problems spend more money on loot boxes because of what is driving those gambling problems. And that's a theoretically valid explanation as well, because after all, problem gambling is a state of affairs in which the individual is engaging in excessive and disordered spending or gambling activities that are beyond their volitional control.

They can't control this. So you could be out spending, spending, spending, spending, spending on slot machines uncontrolled. And then you go home, you switch on your favorite game, and you see something that looks a lot like a slot machine, so you start spending on that too.

We don't know which of the cases is true. We don't know which of these is right. But we think that in either case, it's a clear cause for concern, and it's not something to be trivialized.

In one case, you have a mechanism in games that many children do play, that is literally causing a state of affairs which is enormously destructive. And if loot boxes do cause problem gambling, we're looking at an epidemic of problem gambling the state of which the world has never seen. But at the other case, if that's not true, and I'm totally open to that not being true, totally open the other state of affairs, be the case, if that's true then you've got a system in which games companies are differentially profiting from the most vulnerable of their consumers. Problem gamblers already have enormous going on in their lives. They don't have their body taken away from them through this as well.

So that is-- you'll notice at the top, there are URL links. Those will link you to each of these studies. But more than that, they'll link you to the data for each of these studies.

I adopted a process called Open Science. It's a set of practices, one of which is that I always openly share all of my data. If you want to have a look at the data for these studies, if you want to see what it's like, it's out there. It's free for you. Go have it.

And other people have been having it, and they've been finding similarly worrisome things. This is a study by Aaron Drummond and Jim Sauer out of New Zealand, where they sort of looked at how much money problem gamblers were spending by reanalyzing our data, which is available freely to anyone who wants it, and they found that problem gamblers were spending enormous amounts of money on loot boxes and suggested that maybe setting limits might be a good idea. But beyond those effects I've talked about, there's one very important topic, which is children and adolescents.

So contrary to what you may have heard, a recent study conducted by the government in country, in the UK, the UK Gambling Commission found that as many as a third of children aged 11 to 15 had opened a loot box, which was alarming. It's alarming because we know that engagement in gambling activities in childhood and adolescence is a key driver of gambling problems in adulthood. We don't know why children and adolescents are particularly vulnerable or susceptible to the development to gambling problems.

Some people say it's because it's a turbulent social time, and they find gambling as a means to cope with that. Other people say, oh, there are neurodevelopmental explanations. It's to do with brain plasticity. But for whatever reason they're very vulnerable.

So we set out to find out if the same link between problem gambling and loot box spending existed in adolescence as well. And guess what? It does.

In fact, it's much, much stronger than in adults. This isn't new research. This has been out for a while. So you have the same relationship replicated in adolescence, but that's no surprise because this replicates everywhere.

Another interesting thing we did, was we asked those adolescents why are you buying loot boxes? And they gave us a number of answers, some of which you might have predicted. Others of which, you might not have predicted.

When I read out these things bear in mind, these are older adolescents. They're aged 16 to 18. These are teenagers.

So some of them say things like gameplay advantages, which you might have seen coming. I feel pressured to get new gear, continue to compete with ever changing boundaries of what's classed as good gear. New gear is constantly-- is added constantly, and thus, gear quickly becomes outdated.

Or I enjoy the game. I compete with friends. I don't want fall behind them. You cannot be competitive at NBA 2K19 or FIFA 19 without them. This is the sort of stuff we might have predicted.

But we had other responses as well. And the papers are out there. All these papers are freely openly available. You can get access to them if you want to.

Lots of the adolescents said that they were opening boxes for the fun, excitement, and thrills of opening the box itself. Here's a quote, bear in mind, this is a minor. "Shit, just feels good, man. Seeing other people opening hundreds and you get a few of that, feels good and keeps me going."

Here's another one. "Because it's addicting and thrilling reaching into the unknown." Some of them talked about the gambling feeling associated with loot boxes.

So this brings me to the subject of Kinder Eggs, if you're at the UK and EU, or baseball cards, if you are in the US. I used to have a lot of sympathy with the argument that loot boxes were just like baseball cards. I don't have any sympathy anymore, and that's because whilst you might be able to point to similarities between loot boxes and baseball cards, you can also point to differences. And I'm increasingly coming to see the baseball card line as a method by which the industry, like a stage magician, draws our attention towards something, whilst distracting it from something else.

So sure there are similarities. But here's a difference for you. Loot box spending is linked to problem gambling. Here are other differences for you. Can you imagine anybody saying that's about Kinder Eggs?

It's a ludicrous argument. We've never determined what's safe before by looking at the similarities between it and something else. Say I run a cinema, and I serve Coca-Cola to all my customers. Coca-Cola is a thick, black, viscous liquid, full of energy, and I sort of got a great deal of engine oil. And I said to you, I know what, I'm just going to swap out the Coca-Cola in people's cups with engine oil because it's similar in that it's also a thick, black, viscous liquid.

You'd have me arrested. That's never been how things are done. You can't say something is safe because it's similar to something else.

Let me move on and talk about the features of loot boxes. There's some people who would tell you that loot boxes that are only cosmetic contain only cosmetic items and are in some way harmless. That's a common opinion you'll hear from people.

We were asked by the Australian government-- I present this research to governments quite regularly. I've presented to the Australians. I've presented to the UK Select Committee, in our own parliament. And the Australian's said, are there any particular types of loot boxes that are harmless?

So we went out and did something called a moderation. And by the way, this is the basic effect. This is the problem gambling severity people who engage early in unpaid openings versus who pay to open, and people who pay to open the boxes have more severe problem gambling. But that's what you'd expect, because that's what everyone sees whenever they try and run this analysis.

We tried to do something else, where we tried to see if certain features of loot boxes strengthened relationships between spending on them and problem gambling. And we essentially found that no matter what kind of loot box you had, it was linked to problem gambling, whether it was cosmetic or paid to when. It's an early exploratory analysis. There were some small effects in there.

But generally, what we seem to be seeing is that there's something specific about the loot boxes. That brings me to my final slide, which is about the prevalence of loot boxes. Loot boxes are an extraordinary popular way of making money in games.

They're in a lot of games. It's quite hard to find out what games have loot boxes, because they're not sort of labeled very clearly. So we went through, we just tried to find out how many games they were in.

We went through the highest grossing Google Play games in the UK. I imagine this is analogous to a situation you have in the US. We found that 54% of those top 100-- 54% of that top 100 had loot boxes in, the top grossing games. But sort of, perhaps worryingly, 94% of those games with

loot boxes in were PEGI rated, which is our rating system, it's an analogous to the rating system you have over here, were rated as being suitable for 12 or above.

So there are lots of loot boxes in games that are played by children. And there's clear evidence that there's the potential for harm in them. Again, we don't know if it's that the loot boxes are driving problem gambling, or if it's that problem gamblers simply are drawn to spend more on the loot boxes because something to do with them. But in either case, it's extremely worrying.

I'm here today, I'm aware that there's a lot of industry people. We could get this wrapped up. We could find out which of these is the case if you would work with us.

There are people out here. We're not mobsters. We want to work with industry. But in order to answer these questions, in order to find out which way the relationship goes, people need to share that data with us.

You have terabytes of data on users interaction and user spending. That stuff is what we need to find out which is happening, and it's just not being shared. So please, share it before someone decides that's the enormous, self-regulatory powers that you've been given are something that you're no longer worthy of holding, which is a very real scenario. That's me. Thank you for listening.

[APPLAUSE]

PATRICK: Thank you, David. Next we'll hear from Andrey Simonov.

ANDREY SIMONOV: All right, thanks Patrick. And hello, everyone. It's a pleasure to be here.

So I'm Andrey. I'm in faculty of Columbia Business School and-- where is clicker? This one.

PATRICK: Yeah, that's it.

ANDREY SIMONOV: Oh, wow. OK, let's try it. All right, here we go.

All right, so I'm Andrey at Columbia School. And the work I'll talk about today with Tom Romano from Harvard. So Tom is also in the audience here.

In some ways, this paper relates a lot to the kind of the topic of this panel, and the question the panel asks. And I'm really glad that David had a talk about his paper or his work before us, because it really highlights how many different perspectives on loot boxes there are out. So where this paper is starting is, we're trying to summarize all the different views we heard about loot boxes in two separate buckets.

One is that loot boxes are really useful for gaming, and they enhance gaming. And this is that, it's voluntary to use items, and people can choose them, because they'll go to the game, and this items help you to make progress in the game. So it's part of the video game developers to work on.

For companies, it's a great way to monetize the games. And companies have been struggling with this a lot. We heard about fixed cost involved, and it is one of the forms of bundling that this ways you can do pricing. So Adam will talk more about this after me.

For consumers, it's a great chance to obtain useful items in the game. So if I'm stuck on a particular stage, I want to make progress, it's somewhat useful to open a lottery, and with a large probability I'm staying in the same spot, but a small chance I'm just jumping to a very different productivity curve. So there's the same economic arguments which were about lotteries in the 60s and 70s in the US.

So that's one view on loot boxes. A different view is that while loot boxes look a lot like gambling in a lot of different features, so you have to buy some currency. It's in-game currency, but it's often purchased. It's a chance to obtain the item. So even though we're sad that consumers could get direct utility, so in the first story it was utility for play the game, maybe consumers just play little boxes, because they get some utility from a risk. Utility like indirect, like utility from getting excited about the risk.

And this is really problematic, because that is the same as casinos. And it can lead to problem gambling, to addiction, and to all stories like this. Particularly, this is concerning for minors, because kids play video games a lot. So what we are trying to do in this paper, is to really separate out these two views on loot boxes.

One is-- our question is, how much people play loot boxes, because of the in-game functional value. That like the items you get will enhance this gaming utility. And how much they play just for the sake of playing the loot box and getting this maybe like risk preferences, like some draw of behavioral utility from opening a risk.

So that's where we start. And a second way, so if we show there is some preference for loot box which is direct, now we might ask, OK, how much addiction there is? How much problem gambling we can detect about this in the data? So is there some habit formation?

I play more today. I play today and I play more tomorrow because of this. How much of is moderate by the variance of loot boxes related to variable schedule reinforcements? And then, do people open loot boxes in certain conditions, like [INAUDIBLE] consumption.

OK, so this will be empirical paper. We actually have data from a large video game company in Japan. And it will be able to separate this out in some way. But to get us started, to get us thinking on how-- what it means to separate this question, let me show you a very simplified version of the theory model just to get intuition or to imagine. Given its video game conference, we'll call it a toy model.

So there was a consumer who wants to play a game and also open good boxes. One period, he makes two binary decisions. Do I play the game and do I open the loot box? If consumer plays the game, he gets the utility from the game. One is alpha j, which is I just enjoy playing the game whatever. Another is beta, I also enjoy the game more if I win a particular stage in the game.

OK, so this probability win. Note that it also depends on yl, which is do they open the loot box or not. So that's my utility of plane. If the consumer opens a loot box, he or she also gets utility. So it was direct utility from a loot box, alpha l, which is potential as a risk preference. I need to pay a price, p and i don't like to pay money, so it is marginal disutility of money.

That's one part of why open loot boxes. But also, if I open a loot box, there is a chance I get an item which helps me to advance in the game. So with some probability, my probability to win becomes higher because I have this new item. So the goal of the paper is really to separate out those two stories.

And from the model, we want to show do people play loot boxes because it enhances the probability of winning, so it was a beta factor. And if that's the story, we should see that people will open boxes at the moment when the marginal return of having this extra item is the highest. In other words, if I really don't play so well at this stage, and an item in the loot box will help me, that's the moment I want to open the loot box and get the item.

OK, if the second story is saying it's alpha l, it's just my preference for gambling, then it shouldn't really be correlated with do I lose in the game, do I win in the game? I should just be opening loot boxes quite a lot in general and get this utility from loot boxes. OK, so the basic intuition what we'll be looking for in the data.

So the data we get is from a Japanese mobile video game. And to kind of simplify it which simplifies our story in some way is that you think about it as some version of Candy Crush. So there is not much social interactions. People open loot boxes mainly for functional value of the items, so it's not-- it's not about skins. It's really about these characters will help to progress in the game.

We can extend analysis to social interactions, but this helps us to simplify. And so we'll be able-- having the data, we'll be able to measure what is the return of having each character to make progress at each stages of the game. OK, so let me tell you a bit more about the game description to get a sense of what is the context.

It's a popular mobile game in Japan. It's a puzzle game where you have to-- there's a lot of stages you make progress in this game. Every stage is what's called a battle. And when you do this battle, you need to use your skill to play, but you also need to use some kind of in-game characters. To acquire in-game characters, you can play a lot and get them, or you can open loot boxes and have a chance to get a good character.

And then characters differ in the quality. Some characters are better than others, but also in how they specialize. So which helps us as the game progresses, stages becomes increasingly hard, and it requires often different quality of characters, but also different specialization. So we can easily see a moment where I play amazingly at stage 50, but at stage 51, suddenly I get a very different set of characters. And if it's a functional value of loot boxes, that's the moment I would want to open them together as this new thing.

So covers-- will give us some indication for how it matters and different things. OK, so a bit more about the data. We got a subset of individual level, very detailed data from this mobile game company on how people play, and how people open loot boxes. We have a sample of around 800,000 different users.

To highlight some of things we have the data, we have different metrics of play success. So one, I'll show you in a bit is what a score of the player, and how many stars each score gets in a round. That's a very important metric for these players.

We can see which characters they used once they played the game. So from this, we can see, well, if I use a particular set of characters, how successful it was. So we can measure production function of having an extra character, how much extra scores will I will I get. It also allow us to identify the moments in the game where the set of characters I have now is not really satisfactory. That's the moment I would want to open loot boxes for functional value.

We see loot box realizations and distribution of outcomes of loot boxes. And in this game though, I think the regulation in Japan requires you to post probabilities. So for all the loot boxes there was probability for every character which is in the game.

So we see whether the probability is. We see which characters who you get. We know what is the actual realized distribution.

From this, we can compute what is the expected value for a player to open a loot box. So because we know how I play the game, how good the score is, I know what is all distribution of characters in a loot box, I can measure if I open it with which chance he'll be better in the game or not. So that's how we match the functionality of this thing.

And then we have data on actual spending in the game, both in-game currency and how they will purchase this currency with real money. OK, so let me-- basically, I'll share at this stage, the main results we're still working on. So I'm not sure we're ready to share the main kind of analysis of the full model and everything else.

But let me show you our results on the [INAUDIBLE] in question which we started with. So do people tend to play more-- open loot boxes more at the moment when they start losing the game? So as we would treat it, we have different metrics of success.

So maybe the success is you advanced to the next stage. Maybe the success is you have to pay something to keep playing the stage and finally win it. Maybe success is what is the score and how many stars you get at this level. For different metrics we use, almost always-- and this is something we're still testing to be a bit careful-- we find that there is strong correlation between how well you've done as a stage.

So the worse you do at particular stage par to the game, the more you'll be able to loot boxes. And even though-- so we have a control bunch of fixed facts, we try to be careful that this is the right variation to use in the data, I want to highlight this is still correlation evidence. We're still--

there is some instruments in the data we can use, but we are not ready to present results with our correlation.

However, to highlight how this is looking at this on one metric, here is a plot which shows how much people open loot boxes as they play the game, and how well they did in this game. So here on the y-axis, on the vertical one, you have transform probability of people actually opening, engaging in a loot box. And on the x, you have different scores.

The three vertical lines are thresholds to get one star, two stars, and three stars in this game. So the people who play really not so well, they also don't open loot boxes. Those are the guys on the left bottom corner.

As you make slightly more progress and you're close to the one star threshold, that's where you open loot boxes a lot. And that's-- one of the attrition is, you want to make progress and get a better score in this game. And then as people play better, and better you can see downward trend in how much you open loot boxes. So what this shows to you is-- and this is consistent with all descriptive evidence we saw-- there is definitely some functional value in how people open.

So people do open loot boxes a lot in this game for the sake of getting a character which will help you to progress. The slide I wanted to finish with, and kind of wanted to-- and also actually save some time for discussion later, this slide I wanted to kind of highlight here, is even though we show some suggestive evidence for this functional value, and in this we believe that functional value is quite important, it doesn't mean that people open these loot boxes is only for functional value. So what we're really trying to get out of this paper and results-- hopefully we will share soon-- is which share of amount of loot boxes which are opened to people, are really open because of functional value, or opened because of persistent preferences, this preference for loot boxes directly.

Because if it's like 95% of loot boxes because of functional value, well, that's actually part of the video game. But if 95% is really this extra component where it doesn't have to do with how people play the game, maybe we should think about it more as casinos as gambling. So that's our takeaway for that, from the work so far. Right, thank you.

[APPLAUSE]

PATRICK: Thank you, Andrey. Now we will hear from Adam Elmachtoub.

ADAM ELMACHTOUB: Hi. Good morning. So my name's Adam Elmachtoub. I'm from Columbia Engineering. Thank you to Patrick for organizing this session, and for all the great speakers today for their well-informed talks.

Today, I'm going to be talking about a slightly different topic, very different angle. We're actually going to take a perspective on how would I actually design a loot box if I'm the publisher, developer, or the gaming company. And before I really get into it, I want to emphasize that we have no connection to the industry at all. So this is like a neutral perspective.

And we also have a neutral perspective on the entire issue as well. So although we're just we're telling you how one would design it, we're not advocating or vise versa, OK? The reason why we think it's important, is that how can one design regulations without understanding the actual economic mindset of a gaming company, what they're trying to accomplish, which is, make money, right? They're all for profit companies for the most part.

So this paper is telling us how would one optimally design and price loot boxes, and what are the actual outcomes for sellers and consumers. So this is work with [INAUDIBLE] at the University of Toronto, Michael Hamilton at the University of Pittsburgh, and Shao Lei, who is the audience. He's was my PhD student who convinced me to turn his PhD into studying video games. So this is a large credit to him.

All right, and the paper is online if you want to see it. So here the research questions, why do video game companies even use loot boxes? Can we quantify the optimality of such a strategy? One doesn't need to use low boxes to have a video game, so why does this even exist? What is the actual optimal way to design a loot box? We consider many design aspects of loot boxes.

Someone earlier today was telling us that there's millions of ways to come up with a loot box. Some of those tactical decisions includes, do you allow the gamers to have duplicates of items or not? What are the actual allocation probabilities do you use? And do you allow items to be resold to other gamers or back to the platform? These are all actually very important things to consider in loot boxes, and affect both the seller and consumer happiness.

And finally, how do all these things affect the consumers? So given that the seller is going to do something to make them the most money, how does it affect consumers? Their overall happiness? So we'll quantify how much they end up purchasing, and what's the surplus they actually get.

So the framework we're going to use is a mathematical model to answer these questions. I'm going to try to avoid math for today, and just tell you what the results are. You can see all those details in the paper online.

But the core idea is that what we try to model is at the really most granular level, each consumer has some specific willingness to pay for each item. And there might be thousands of items. And these willingness to pays are going to vary by consumers and also by the items.

So some things you value $1. Maybe some things you value $5. Some things you value nothing. They're random, but the seller somehow has a good understanding of how much these items are worth.

So let me give you an actual example. So here two different people. The person in blue has different valuations for these six items than the person in black, and you can see those six numbers above their heads correspond to the six items on the right hand side. And each customer is sort of having different valuations for all the items. And this is the core principle behind our model that we're trying to capture, this heterogeneity across consumers and across the items.

All right, so what is the seller doing in our model? They're trying to maximize revenue. That's always their goal.

And there's two ways to think about loot boxes that we look at. One is called the unique loot box, where consumers are always allocated a new item. And the other one is a traditional loot box, where customers can actually potentially receive duplicates. We call it traditional because it kind of dates back to the idea of baseball cards where you can end up with duplicates. And unique, again, is called unique, because you always get a unique item.

And the way we model consumers, is that they essentially just keep purchasing loot boxes until they no longer perceive any value from them. And that's the central core principle behind our model. So I think it's best to now just show you some examples. So here's just two games, one where there's unique box, one does traditional box.

And here's an actual picture of how the model works. So back to this person over here, he has these-- there's these six items that they're willing to pay for, and you can see how much you're going to pay for these six items above his head. And let's say we're selling loot boxes for $2.99 each. So the way this model works is, the customer thinks that they're going to get one of these items at random. So with probability one out of six, they'll get each of the items.

So on average, they value this loot box at $4.50 by taking the average of those six items. And that's more than $2.99. So in their head, they think, yes, I'm going to buy this because I value the loot box more than $2.99.

So they buy the loot box. They receive an item. And now because they have the item, now the item is worth zero. They don't want to get it again.

So now the value of the next loot box decreases becomes $3, which is still bigger than $2.99, so they purchase another one. But guess what? They got the same thing. So they still value that same loot box again at $3, so they end up buying again because they just received something that was worthless.

So they buy again. Now they have two items and their value goes down. And now their are value for loot box is $2, which is less than $2.99. So now they stopped buying. And this is just one example of our model. So in this case, the customer bought three loot boxes and stopped.

All right, so our goal is basically theoretically describe which strategies are best, and how does affect seller and consumer behavior? So actually, I'm going to take a quick poll. If you're a gaming company and maybe people here representing the gaming industry, do you think it's better to sell unique boxes or traditional boxes?

So anyone can actually take a vote here. So if you think it's a unique box makes more money, raise your hand. If you think traditional box makes more money, raise your hand.

So around 80% of people's the traditional box. Now, let's think about it from the consumer side. Do you think if you're a consumer, do you prefer a unique box or traditional box? So if you're a

consumer, raise your hand if you prefer the unique box. OK, raise your hand if you prefer a traditional box if you're a consumer.

So it actually went the other way. So around 80% of people think consumers would prefer the unique box. Actually, our research is going to show the opposite of both those things. So what we end up with something very counterintuitive. So first of all, we show that unique boxes are actually optimal for the seller, and traditional boxes only make around a 1/3 of much revenue as unique boxes.

And what's happening is that basically, you can charge more for unique box, because it's more valuable. You're guaranteed a new item. And this in turn leads to more revenue. And in both cases, the customers end up purchasing roughly the same amount of number of loot boxes, except that a unique box is going to earn more revenue than traditional box because it has a higher price.

But in both cases, customers end up buying the same number of boxes. Now what that means is, for the customer, if you're buying traditional boxes, you're going to end up with less items overall, because you have all these duplicates. Now the flip side is though, that given that traditional boxes actually had a lower price, consumers are actually happier in the long run because it turns out, the prices are a lot lower when you sell traditional boxes.

So we find that consumer surplus, which is the sort of classical economic notion of consumer happiness, is a lot higher when you sell traditional boxes than unique boxes. Actually, you can show when you sell unique boxes, consumers are left with almost no surplus. And again, the driving force here is that the prices are so high when you sell unique boxes, that essentially leaves nothing for the consumers. But for traditional boxes, you price low enough where some value goes to the company and some value goes to the seller. So we end up with this sort of very counterintuitive situation where, actually, it's better for customers to receive duplicates, because the prices come down a lot.

Now, what happens if I allow resale market, which is the gaming company can completely control this. They can allow you to resell or not. It depends.

And naturally, you might think that if I'm a gamer, I want to be able to resell stuff. That gives me more flexibility. But once again, actually we find that it doesn't really help. We actually see that at most it can increase surplus by 1%, and most of the time it decreases surplus.

Which is again surprising, and again, the driving force is that companies will actually end up charging higher prices, which hurts you overall. So although resale sounds like a good idea, it also allows prices to go up, which is not good for the gamer. Good for the seller.

So let's talk about allocation probabilities. So this is a very important topic. And I think a lot of people talked about it this morning, about being transparent.

So here's just an example of one company being explicit about the probabilities, and we saw several examples this morning as well. So if you're the seller, what is actually the optimal

strategy for you? It turns out, actually the optimal thing to do, is to do the simplest thing, which is just allocate uniformly at random. Which is also in this case may be good for consumers, because they can understand this strategy.

Simply, if there is 1,000 items, allocate each item with probability 1/1000 regardless of how much these items vary in quality. So for example, let's say 1% of your items are the best kind, legendary, which is the example I was looking at before. Then you should allocate legendary items with 1% probability.

So if 10 out of the 1,000 items are legendary, then you should allocate a legendary item with a chance of 10 in 1000. So this is the simplest possible policy, and it turns out to be the optimal one. So this is in some sense good news for both the seller and the gamer. Simplest strategy is not only best for revenue, but it's also the easiest for the customers to understand.

Now here's the caveat, and this is where regulation becomes really important. What happens if the seller lies about the probabilities? This is something that's impossible for any one user to keep track of, especially if you have a 1% chance of winning something, it's reasonable to not get it 15 times and think that's just bad luck. There's no way for an individual to monitor if their allocation probabilities are really being true or not.

So it turns out, if the seller publishes some list of probabilities and lies about them, the seller can actually make a significant more-- significantly more amount of money, more revenue. So there is benefit to lying.

Since there is benefit to lying, there must be regulation around this. Otherwise, people will make money. They're for profit companies.

And this is why Apple and Google have already made such rules in their platforms to make sure that these allocation probably these are announced. And we already had the news this morning, that these allocation probabilities should be announced. But what I'm saying is that, in addition to them being public, they all should also be monitored actually make sure you're following these probabilities.

So we need to keep track of this. And not only on the aggregate level, but also on the consumer individual level. So it's even possible to make more money where in the aggregate you're following the probabilities. If you see what everyone's getting, the probably all look correct.

But for individuals, the probabilities may not be correct. So it's possible to gain more revenue by extorting specific individuals. So even monitoring at the individual level is necessary over time.

So to wrap up, I don't think one can design regulations and policies without really understanding the economic or business mindset of a company. So we're proposing, basically, the first model to do this, and there's many sort of caveats, of course, but I think there's an important direction to study. So we show that unique boxes are best for companies, but actually, traditional boxes are possibly better for consumers.

Allowing a resale market may seem like a good idea for consumers, but actually we show it has minimal value. In most cases negative value. So that's important to understand.

We show that allocation probabilities don't have to be over thought. Actually, the simplest thing to do, is just allocate randomly. And that's actually best for everyone.

And finally, be sure that there is benefit from lying about these probabilities. So this is a specific case where regulation is needed. If loot boxes are allowed to stay as a legal sort of way of selling items, then at least we need to regulate these kind of allocation probabilities. Thank you very much.

[APPLAUSE]

PATRICK: Thank you, Adam. Now we will hear from Sarah Domoff.

SARAH DOMOFF: All right, thank you for having me. And I'm glad to be presenting along such esteemed researchers on this panel. I'll be speaking about children and gaming, and some current issues that I have encountered clinically, and then also in the research.

So I will be presenting some gaming trends among children, parent child interactions around gaming, unique concerns related to current games, and problematic gaming, defining it for you, and helping you understand when does gaming interfere with a child's functioning. So in terms of gaming trends, we know that screen time is really high for children, adolescents. And actually the amount of time children use mobile devices has tripled in the past few years. At the forefront of many parents and children minds, this past year has been Fortnite. And it remains a popular game, with 45% of children and 61% of teens ever playing it.

When we consider how games impact children, it's important to consider the content and the context of gaming or other types of screen media use. So when I speak of context, I'm talking about when children can play different games. And with mobile games, children can play games at any time at any place. And indeed, a quarter of teens indoors playing Fortnite in class.

But besides nationwide studies on screen and media use among children, there really has been limited research conducted on preteens and younger children, and their gaming experiences. And so there's definitely a gap in the research that my team and I hope to address. What I can tell you a little bit more about, are parent child interactions around gaming.

Now unfortunately, approximately 3/4 of parents and children have never played Fortnite with each other. Although they may played on their own, there isn't interaction around different mobile games, for example, one being Fortnite. In my research, we conduct a naturalistic study looking at how do parents and children interact around different types of screen media. So children wore audio recording devices, and we transcribed and described parent child communication interactions around different types of screen media.

In this study, we found that there's very limited interaction between parents and children around media and mobile devices. So we've heard earlier today that parents have a lot of interaction and

power to kind of control some of these concerns related to games, but right now things are getting in the way. There are barriers to parents and children interacting around gaming.

And this is really problematic, because recent research supports setting limits around gaming. And that parent child communication about gaming can be really important for older children and adolescents. So we definitely want more of this, but for some reason I think one of the big things, being the rise of mobile games, makes it very challenging for that to happen. And indeed, parents beliefs about games associate with parenting around gaming. So that definitely is an area that we want to pursue more and really research into, what can we do to help parents engage with their children more around gaming.

So in terms of unique concerns, at my clinic at Central Michigan University, we really focus on helping clinicians, teachers, other individuals important in children's lives, communicate and make decisions around media use, screen time. And one thing that we hear time and again, is that gaming is embedded in social interactions among children. So sometimes this can be really good. You connect with your friends and peers on games.

And other times it can be conflictual. And we're seeing it kind of trickle into the school-- the schools zone. Children are developmentally vulnerable to gaming risks, and we heard about this today. And then finally, one thing that I've encountered is parent child conflict around gaming and problematic gaming.

I wanted to find for you what problematic gaming is, and tell you what the current status is on it being a diagnosable condition. Here in the States, we have DSM-5. In section three, which is conditions for future study, internet gaming disorder is listed. These symptoms include preoccupation, withdrawal, unsuccessful attempts to cut back, loss of interest in other activities, continued excessive use despite psychosocial problems, among others.

In order to get-- let me put it back for people so they can write it down. In order to be considered to have a problem with gaming or disordered gaming, there has to be dysfunction in someone's life. So it's not just enjoying playing video games, or being really enthusiastic, or wanting to be a professional gamer. It interferes with the child or adolescents functioning.

Recently, the World Health Organization has made gaming disorder an actual diagnosis with the ICD-11 code up there. Symptoms include impaired control over gaming, increased priority given to gaming to the extent that gaming takes precedence over other life interests and daily activities, and then continuation or escalation of gaming despite the occurrence of negative consequences.

So it's very important to point out here that it's not about the number of hours that you game. It's not about frequency or passion. It's about actual dysfunction.

This must be severe enough to lead to significant impairment in important areas of functioning. So, for example, not sleeping, not going to work, not going to school, losing relationships. So it's really important to clarify what's a clinical issue with gaming versus enjoyment.

Now back several years ago when I was doing my clinical postdoc, I'm a clinical psychologist and work with children and families, there weren't measures out there to capture concerns related to media use. And so that led to the development of the Problematic Media Use Measure using DSM-5 criteria to identify children at risk for problematic media use including gaming. And what's really important to point out here, is that this measure predicts psychosocial functioning over and above the amount of screen media use.

And so again, I'm trying to shift this conversation away from just tell me how many hours is allowed, to what are some symptoms or engagement with different types of screen media that would indicate that there's a problem that should be addressed. And so that's a very different approach to understanding when does it become problematic. We don't necessarily care as much about the number of hours, although that will correspond or correlate with problematic gaming.

So this measure worked equally well for boys and girls, and it's been tested in children ages 4 to 13 years of age. It's a parent report. We just create a self report version of this. And really, this came out of the need from clinicians to have a screener so they can address concerns related to media use or gaming in well child visits or in other clinical arenas.

I want to spend the rest of my time talking about some of the work that I pursue at the Center For Children, Families, and Communities at CMU. And this really stems from a need from providers, school personnel, and parents in communities around the country regarding, how do I manage parents around screen media use? How do we handle or make systemic change when screens are in schools and so forth?

So at this center, we seek to address growing media related concerns, including problematic gaming, cyber victimization, media parenting skills. But importantly, a large part of what we do, is we provide training to providers to help them screen for problematic media use, and give them tools for managing conflict in the home. Again, with mobile gaming and mobile devices, they can go anywhere. And so when it comes to school policy, there is not one consistent school policy across all schools in a state, for example.

And so a lot of times the schools are seeking guidance around should we set limits on access to mobile devices during the school day. With mobile games it may be embedded into interactions during the school day, and so if there are conflicts related to performance on a mobile game, that may trickle over into the real life, in real world. And then additionally, what we also focus on, is developing interventions that treat screen media related concerns. So helping parents manage screen time using harm reduction approaches.

So if you'd like more information, I have my contact information up here. I wanted to leave enough time for discussion, but then also, there's a lot of research that I wasn't able to talk about today related to other types of screen media and concerns, and I'd be happy to share that with you if you're interested.

[APPLAUSE]

PATRICK: Thank you, Sarah. OK, now we have time for a Q&A. We'll have about 15 minutes for this. So I'll start off with the first question, is-- this will be posed to as many people as I feel comfortable answering it. How can you determine if a person is not just a risk taker, meaning they are more likely to buy loot boxes, excessively gamble, and/or use drugs? Is this getting at some correlation with risk aversion and just give them a definitional issue of can you separate out risk aversion from boxes?

ANDREY SIMONOV: I mean, I guess that in the framework which I talked about, it's really all part of his alpha l is a persistent preference for loot box. And I guess one way to separate it out is, just ideally what you want to find is some shifters which will affect your-- will not affect the risk preference characteristic of risk of the loot box, but will affect how much people are exposed to the loot boxes, in which environments they use them? It required a lot of data and the right variation in the data, I guess.

And then it's often-- I think in-game, if you have-- if you can separate it out, was it in model, economic model list of things. That's great. It's harder to have extra data on how consumers-- what happens to them later in their lives, because it's really hard to attribute what happens to people later on to a particular thing which happened to them in this game.

PATRICK: This is a question from Twitter for doctors Zendle and Elmachtoub. Did you consider aesthetic design in your research?

DAVID ZENDLE: So to some extent, yes. So what are the interest-- there are lots of-- we've got a paper that's just sort of coming out in a journal called Computer and Human Behavior where we looked at different features of loot boxes, and whether any of those loot boxes were particularly strongly linked to problem gambling. When it comes to aesthetics, the one thing we did look at was near miss effects. So near misses are a common thing you get in gambling devices, and loot boxes mirror gambling devices in lots of important ways.

So there's the fact where, say you're playing fruit machine or something, and you almost get a win. You're just one fruit out. You may be more likely to play again, because you've got that near miss, or perhaps in the gamblers mind, a near win. Many loot boxes have a similar mechanism.

It's not clear if they're imitating slot machines directly, or whether it's some sort of convergent evolution, where you've got a sort of rotating disc of options go round. And then you might just miss out on something really good that you like, then you get something less good. So we look to see if those types of loot boxes were both strongly linked to problem gambling.

We found tiny effects. Like little tiny things. Nothing that we consider important or trustworthy. Generally, it seems that regardless of these features, that link to problem gambling exists.

ADAM ELMACHTOUB: Well, I guess it's good that I let you answer for us, because we ignored that effect, and now you justified it for us.

[LAUGHTER]

DAVID ZENDLE: Yes.

PATRICK: Another question from the audience. Does the literature support the idea that loot boxes are different from baseball cards or Kinder Eggs, or has that simply not been studied?

DAVID ZENDLE: Oh, that's actually a good question. So I was wondering if I would get this, because-- so we've got this link between problem gambling in loot box banding. But you might engage in an argument where you say, ah-ha, but perhaps buying Kinder eggs is also linked to problem gambling. Now logically, that doesn't sort of fly as well as loot boxes does, because loot boxes look so much more like gambling, and there's this sort of distribution of value in them which you just don't find in a Kinder Egg.

There are many formal distinctions. We thought, just ironclad things. Well, we'll go and run that study.

So we went and we asked about 900 people about collectible card game spending to see if that was linked to problem gambling? And it just wasn't. There's something special about loot boxes.

We haven't published that study yet, but if anybody would like to have access to the data from it, I'm very willing to share any of the data from this. And since it's a question that people are asking, I'll make it a priority to get it published. I do think we're pre-printing, where as soon as I finish the manuscript, I make it publicly available so people don't have to wait for it to go through the general process. So if this is something people care about, they can have that data within a week if they like and the paper.

Yeah, one thing though it's important to recognize, is there's no friction costs for buying loot boxes. There's a huge friction cost for buying a physical item. And that's why we don't have that cost in our model.

So when you buy something-- even if you buy it from Amazon, you still have to wait to receive it. And by that point, you're thrill may have disappeared a little bit.

DAVID ZENDLE: Yeah, that's a really neat point. I remember when we were talking to Australian Senate about this, they sort of said, what are the differences between loot boxes and trading card games in the real world. We said, well, there are loads, and we don't really know which and the important ones. But certainly one of the things that seems important, is the velocity and the volume with which you can make loot box purchases. I mean, you can't go to a shop and just buy Kinder Egg, Kinder Egg, Kinder Egg, Kinder Egg, Kinder Egg, Kinder Egg, Kinder Egg, Kinder Egg, but that's what we see people do with box boxes.

PATRICK: This question's from the audience and potentially to everybody. Are there common graphical or audio elements presented during the opening of a loot box, such as a flashing screen, or lights, or louder music, that increases the potential for spending on loot boxes? I stumped them.

[CHUCKLING]

DAVID ZENDLE: I'm not aware of any research, which shows that that's the case or not.

PATRICK: This question's for Andrey Simonov. What control variables were in your study? Is there something to control for the popularity of the game, or the rarity of the items, or any unique traditional style boxes?

ANDREY SIMONOV: Yes. So all the analysis done within the game, so there is no need for control for the game. There is-- so for the descriptive items I showed, there was controls for stages, for player fixed effects, what kind of items people had. So at this stage, what we-- this is all against [INAUDIBLE] relational. We have the right variance, we just didn't clean enough results to be ready to share the results of causal estimates, but well basically, does correlations hold whatever the fixed effects will include basically?

PATRICK: Do you see any difference between purely cosmetic loot boxes, or some of the more pay-to-win loot boxes for any of the research you presented for implications for addiction, or for the pricing, or for usage? That's open to everyone.

ANDREY SIMONOV: And I mean, for what we presented, one, there's two things to keep in mind here. One is, we kind of-- in this particular game, there is no value for having cosmetic value of items. There's little social interaction, so we can't focus on this functionality as probability of winning. About pay-to-win, so this is also a pay-to-win game in a sense of you need to get those items to progress.

But important fact is, you compete with a machine. You don't really compete with other players. And I think that's the role of play to win items it's extremely different if I am paying to get an items that other guy can get as well, and now it's like a prisoner's dilemma, because I want to play the game well, but also this guy has a game item.

And I think in any games was interaction with between players, even items without functional value, it can get very problematic because gaming companies have a desire to do it. In our case, we don't have this problem, because you really compete with the machine. But I would keep this distinction in mind for different games.

DAVID ZENDLE: I think you can see also, different motivations for purchasing-- it might seem obvious-- items from the boxes that you give you some sort of advantage in meeting the ludic challenges of the games and ones that give you some cosmetic value. When we look to our data we asked people why, these adolescents, why are you buying these loot boxes, lots of people said, I just want to fit in with my friends. And so I think one thing that we've all got to be aware of, is that games aren't coin operated arcade machines anymore.

They're vibrant social worlds, and just because your motivation for purchasing something isn't to do with literally winning the game, doesn't mean that it's valueless. There's a lot of value in looking a certain way in many of these games. And lots of times, people play these games not to win them, but to hang out with people.

PATRICK: So there'd been some mention early today of video game developers potentially using dynamic odds for loot boxes. Does that have any implication for addiction and variable reinforcements, or for the optimal pricing of that, or usage?

So I think that with regard to dynamic odds, I think that would be a nightmare to regulate. Because as the odds are changing, you can never-- with just a couple samples see if you're truly adhering to such odds. So that's something that I think would really be something to worry about in terms of-- just in terms of making sure that people are sticking to these odds, even if they are dynamic. And the unique thing-- another unique thing about loot boxes versus baseball cards, is that companies can see your inventory. That's a fundamental difference.

So being able to take advantage of that would obviously be beneficial for the seller and allow them to exploit more. But also be bad for consumers, because they would be very, very difficult for them to understand their optimal purchasing strategies in the long run of the game. It would be very hard to anticipate how much money they will need to succeed in the game if everything is updating dynamically.

DAVID ZENDLE: I'd like to agree with Adam's comments there. They're well taken. I'd also like to point out that this isn't a theoretical future. These are things that being patented by companies as we speak.

There's a new paper that's out in this journal Computers And Human Behavior, which is one of the best journals for this stuff, by a research called Dan King. You can find it online if you like. And he approaches this issue at an interesting way, in that he just does a Google patent search. And the things that people are patenting are unusual and might surprise you, or they might worry you.

PATRICK: And you, Sarah?

SARAH DOMOFF: What was that?

PATRICK: Did you have any comments?

SARAH DOMOFF: I just think it's-- I'm going to bring a point that may not be entirely related to this, but it's really challenging for parents to navigate all of the details of a variety of games that kids are playing. And it takes a lot of effort, and time, and I find myself, and other clinicians, and other individuals who work with children, have to spend a lot of time to figure out what are these protections that we should tell parents about, because it's just not clearly labeled. And regardless of whether regulations are coming forth, I think we definitely need better documentation about what parents should consider, whether from within the industry or from consumer groups, such as Commonsense Media, because it's just really complicated, and there are just so many games for parents to keep up with it. It's a real challenge.

DAVID ZENDLE: I'd like to follow up on what was just said by saying that, in fact, many of the games for many of the companies for which we see these sort of patterns for these new types of loot boxes being registered are companies that make mobile games for children. So I know

Kabam was mentioned again, and again, and again, during this paper. That's the company that makes Marvel's Contest of Champions. That's a game where you can play with your favorite Marvel superheroes against each other.

I think the industry needs to take a really long look at itself and see what is it doing. I hear these internal discussions by the industry say, of course, we behaving totally ethically. But from the outside, it really doesn't look like that, and it really doesn't look like that to researchers, and it doesn't look like that to policy makers, and it doesn't look like that's regulators. And in my home country, the UK, we're talking very seriously about should you be able to self-regulate? Have you demonstrated that responsibility, and lots of people think that you haven't.

PATRICK: OK, that concludes the second panel. Thank you all very much. I think we'll take a 10 minute break.

Yeah, we'll shoot for a 10 minute break. And it's 2:35 now, so let's aim to be back here at 2:45, please. Thank you all.

[APPLAUSE]

[MUSIC PLAYING]

[SIDE CONVERSATION]

MARY JOHNSON: Good afternoon. I am still Mary Johnson, and this is William Ducklow. And together, we're going to be moderating today's final panel on self-regulatory initiatives and consumer education.

WILLIAM DUCKLOW: So joining Mary and I on the final panel today are the following, Pat Vance, president of the Entertainment Software Rating Board, Keith Whyte, the executive director of the National Council On Problem Gambling, Anna Laitin, director of financial policy with Consumer Reports, and finally, Ariel Fox Johnson, senior counsel for policy and privacy with Common Sense Media. Please feel free to refer to the speaker bios that are available outside for more background information.

MARY JOHNSON: So thank all of you for being here. We're in the homestretch here of today. And as with the prior panels, you'll each have 15 minutes at the podium. And thank you to everyone for staying on time. This has been moving very smoothly, and we really appreciate that.

So after the formal presentations, then we'll move to a moderated discussion. Please feel free to take the podium, Pat. Thank you so much.

PATRICIA VANCE: Well, thank you very much, Mary and Will. It's great to be here. We're going to-- I'm going to start my presentation just talking a little bit about who the ESRB is.

We are celebrating our 25th anniversary this year. We were established by the industry as a self-regulatory body. You're probably most familiar with our rating system. We assign ratings to video games and mobile apps to ensure that consumers, but especially parents, have the information they need to make an informed purchase decision.

We also enforce a very robust set of marketing guidelines that the industry has adopted that relate to how ratings are displayed across boxes, in ads, as well as how product can be marketed, particularly mature rated product. And then, last but definitely not least, we have our ESRB Privacy Certified Program, which is a privacy seal certification that is one of the first COPPA safe harbors sanctioned by the FTC. So those are our key activities.

When it comes to our ratings, we have a three part rating system. We have age rating categories, that suggest age appropriateness. We have content descriptors. We use approximately 30 different content descriptors that indicate why a particular age rating was assigned to that particular game or app. And then our newest and third component of the rating, is what we call interactive elements, I'll talk a little bit more about them as we get into the presentation.

ESRB ratings are available for games and apps across a variety of different devices and platforms. They are available for all boxed games sold in the United States. They're available on many digitally delivered games, mobile apps, virtual reality, augmented reality, and mixed reality games and apps as well. So we've had universal adoption among major retailers, as well as the major game platforms from virtually the beginning of the ESRB rating system.

In part thanks to being around for 25 years, 87% of parents of kids who play video games, say that they're aware of the ESRB rating system. And of that 87%, 77% say that they regularly use the ratings. In other words, that they're checking the most, if not all the time.

Now, despite the fact that interactive elements is the newest part of our system, 70% of parents say that they're aware of the interactive elements. And of those parents, 79% say they regularly check them. Now, all of the interactive elements are important, but this is a ranking, and in the context of the conversation today, I thought it was important that although in-game purchases is an important component to parents, 75% of parents say they're that the in-game purchase notice is either extremely or very important in helping them decide which games are appropriate for the kids to play.

If you look at this chart, our shares location interactive element, 82% of parents indicated that that was extremely or very important to them, followed by users interact, and followed by unrestricted internet access. So all are important. But this is a general ranking. So it's important in the context of the conversation today to appreciate that there are many different aspects of disclosures that are important to parents.

Now, parents consult many different sources when they're trying to make a decision about what's appropriate for their children and families, Not Just the ESRB rating information, but they're playing the game themselves. And I think we're finding that increasingly to be the case as new generations of parents have kids, and they grew up with playing games. Parents are also

checking out the genre as a good indicator of whether or not a particular game is appropriate for their children.

They're conducting internet searches. They're looking at the descriptions on the game boxes and on the detail page when they download a game. And they're also consulting user reviews.

Now, the Family Online Safety institute released a study last year that suggests that parents are actively engaged in having conversations with their kids about online safety and the use of technology in the home. 91% of parents set household rules. That's a really important statistic for us to understand, because it's not just about one solution or one tool. It's about parents being actively engaged.

The ESRB provides a family discussion guide on our website to actually start that conversation. 64% of parents indicate that they frequently discuss online safety with their children. And our own research suggests that 7 out of 10 parents have actually prevented their child from playing a game because of one of the interactive elements that were assigned to the game.

Now, ESRB ratings are integrated with the parental controls that are available across different game devices. So here you'll see the Xbox, Playstation, and Nintendo parental controls, which allow you to block games by their ESRB rating. And you can do the same thing in the Google Play Store.

Now, we put together this little video to give you a brief glimpse of how parental controls enable parents to manage the gameplay in their home.

SPEAKER: Playing video games as a family is a great way to spend time together. And it's never been easier for parents to manage what, how, when, and with whom their children play. Even when they're not around.

Parental controls are available for all current game consoles, handhelds, PCs, smartphones, and tablets. Each device has settings that can limit and manage the experiences that your children have, and they take just a few minutes to set up. On some devices, you can remotely set controls from your mobile phone or your computer. So whenever you want to add a restriction or change a setting, you can be assured that your children enjoy playing games within the parameters that you approve.

There are four important ways to control how your kids play video games. You can control in-game purchases or block them altogether. And the account holder will always be notified whenever a purchase has been made. Parents can also limit play and screen time. Some devices allow you to set specific time limits for every day of the week. You can also block games based on their age rating, and you can restrict online communication.

Some devices allow you to approve with whom your child plays online or block other players, even by specific game. Above all, remember to keep on having fun playing video games with your kids, and talk to your kids about the games they like to play. There is no better way to make sure your child has the best experience possible playing video games then staying involved. Visit

parentaltools.org to access parental control guides and a family discussion guide to help start the conversation with your kids.

PATRICIA VANCE: So there are obviously a lot of functionality in parental controls, but are parents using them? And based on our latest research, 72% of parents have indicated that they have activated or enabled parental controls on their computer at home, their mobile device, or their game console. And not surprisingly, the propensity for them to do that is higher for the for parents with kids of younger ages than older ages.

So again, all of the functions and parental controls are important to parents. But if you look at what they're actually doing with parental controls, our research says that the number one function they're actually enabling is the manage in-game spending function. So 2/3 of parents indicated-- 2/3 of parents who were using parental controls indicated that they had activated the manage the in-game spending limits.

64% indicated that they were restricting access to social media using parental controls. 61% had indicated that they were-- they had blocked games based on ESRB ratings. And 52% indicated that they had set time restrictions, followed by 50% indicating that they had managed online communications.

So parents are familiar with parental controls. They're using them. And they're using them in a variety of different ways.

Last year, we began looking at loot boxes specifically. We conducted research among parents, and we discovered that a large majority of parents don't know what a loot box is. In fact, only 32% of parents indicated that they knew what a loot box was, but when we presented several different options for them in terms of a definition for loot boxes, they were able to select the correct definition only less than a 1/3 of the time.

Once we told them what a loot box was, by far the biggest concern that they expressed they would have would be the ability for their children to spend money much more so than the randomized nature of loot boxes or the impact that they may have on the amount of time that their child plays games. We repeated this research earlier this year and found very similar results. Although there is slightly higher awareness in use, awareness and understanding of what loot boxes are among parents, the actual concern they expressed about spending was even higher than the first time we surveyed parents.

So this is important to understand in terms of how we're presenting disclosures. Our rating systems primary target audience are parents. Parents need to understand what it is that we're providing, and we need to provide it in a way that they understand, and that's concise, and that they can digest at a fairly quick glance.

So we started assigning in-game purchases to physical video games back in April 2018. We had begun-- we had already begun doing something similar in mobile and digital games, but it wasn't until early last year where we began actually assigning the in-game purchase descriptor to

physical video games. And today, 18% of all rating assignments for physical video games include that notice.

Now that notice spans not just loot boxes. It spans all types of in-game spending. As our research indicated, parents are concerned about in-game spending of all kinds, not just loot boxes.

And so the when you see an in-game purchase notice on a game, it indicates that there are-- there's the ability to make a purchase using cash, whether you're buying virtual currency, or whether you're buying a subscription, or a season pass, or a loot box, or some other in-game transaction.

But disclosures aren't enough. We want to make sure that parents know that when they see that in-game purchase notice, if they want it limit-- if they want to limit their child's ability to spend money, they know how to do it. So we launched parentaltools.org last year, which gives very easy access to parents to instructions on how to set up parental controls depending on which device they have in the home. And we created an animated video that's very simple way to sort of describe what parental controls can do. And to date, almost a half a million views have been generated for the video, almost 100,000 page views, and we've been writing articles, and blogs, and making an effort to make sure that parents understand what in-game purchases enable, as well as the parental controls that are available on different devices.

Now we've just recently refreshed parentaltools.org and added an additional functionality to the website, which allows parents to first check, well, what do I want to do with parental controls, and then get specifically to that place in the instructions for that device that they have in their home so that they know how to control spending, control time, control by age rating, or restrict communication. We also have just partnered with GameStop and are talking to other retailers, so that this holiday season whenever a parent purchase, or any consumer for that matter, purchases a new console, that it comes with an insert that reminds them to set parental controls and directs their attention to parentaltools.org so that they know how to do that. And we're going to be complementing that program with an online ad banner campaign targeting parents.

We also just released a new blog on our website, esrb.org, that is entitled What Parents Need To Know About Loot Boxes And Other In-game Purchases which really tries to break down what's a very complicated concept. And as you heard earlier today, loot boxes come in all different forms in all different contexts. And so we tried to really simplify it for parents, and also make sure that they understand what other types of in-game purchases can be-- are available. And we'll continue to create new articles and new blogs that help parents navigate games.

So in summary, I just want to tell you that you can be confident that any game that gets published, regardless of the device, will have some descriptor that will indicate that there are in-game purchases, that parents have very low awareness of what a loot box is, but that their main concern is spending, and we are addressing that by not just having disclosures available for games, but also making sure that they have the tools and parental controls to manage the money and time that their child spend playing video games. We'll continue to support parents like we have for the last 25 years with disclosures, with making-- with enhancing the system whenever

it's warranted, having educational materials available to parents, and addressing their concerns as we go. So thank you very much.

[APPLAUSE]

WILLIAM DUCKLOW: Thank you, Pat. Next we have Anna Laitin. I can't believe no one's fallen.

ANNA LAITIN: Hi. Good afternoon, everybody. My name's Anna Laitin. I'm the director of financial policy at Consumer Reports.

First, a little bit about Consumer Reports and why I'm here. We're an 80-year-old independent, nonprofit member organization. We work side by side with consumers for truth, transparency, and fairness in the marketplace. Most of you know us for rating cars and mattresses, but we also do work on a wide range of issues.

We approached this workshop-- we don't have-- we haven't historically done a lot of work on video games, so we approached this workshop from a perspective of looking at larger marketplace trends first. And a couple of things we've been spending a lot of time on lately, drip pricing, hidden fees, the obfuscation of the true cost of a product or service. This is something the Federal Trade Commission has spent a lot of time on from a 2012 workshop on drip pricing, to the workshop earlier this summer on online event ticketing.

It's very hard for consumers to know what they're getting, what it's going to cost. Shopping has become more complicated and more confusing. And then the manipulation of consumer psychology, monetizing user experiences, and dark patterns on websites that get people to do things that maybe wasn't exactly what they intended to do when they started.

So how does that apply to the gaming marketplace? Well obviously, the increased monetization of play. That's what we're talking about here.

You've got the downloadable content, those one time purchases, and then the microtransactions, the loot boxes we're all talking about today, repeat purchases, consumables, often very quick purchases made often in quick succession, and manipulative user experiences. So subtle tactics that influence consumer behavior, and nudge them to purchase these loot boxes. What are loot boxes? I put together these slides not knowing exactly what was to be talked about in the morning, so there's a little bit of repetition here. I'll move pretty quickly.

In the FTC announcement, the description is here. We see it. The key things for us, the rewards are seemingly random, paid for with real money or in-game currency, sometimes impact gameplay, and the contents are generally not transferable.

So in terms of transparency, this is a screenshot from Counterstrike Global Offensive. Consumers are unaware of what they're actually purchasing. The odds of winning a specific item are not disclosed.

This particular loot box, there's a lot of options, including one full, surprise, rare, special item. In-game currency and pricing can really hide the true cost. This one from Fire Emblem Heroes, it's very hard to see on these slides, but it costs five orbs to summon a character, four each to summon the next three, and three orbs to summon the last. So 20 orbs spent on loot boxes.

But how much is an orb? That price isn't linear. So to figure out how much it costs to summon 20 characters, is not a simple matter to figure out. This is very much finding ways to hide the fact you're spending real money on these characters.

In the ratings, we applaud ESRB for the work they've done, but as the previous presentation showed, there's a label for in-game purchases and that can mean a huge range of things. That's everything from, you can buy a new character when it's released, to we have surprise loot boxes, and a whole wide range. And I know when I look at a game, there's a lot more detail that consumers need to really understand how they might be presented with the option to spend money.

And similarly, labeling for mobile games provides limited information. This one says in-app purchases. And then in information, you actually can get some good information about how much things cost. But again, you've got that same obfuscation.

This one for Clash Royale, you can get a-- can't even read it on my own piece of paper, a pouch of gems for $4.99 or a wagon of gems for $49.99. Is a pouch 10 times smaller than a wagon? What are you actually buying? And it's again, taking the money away from the actual what you're buying.

So loot boxes, just in conclusion, are not transparent. Consumers aren't sure of what they're getting. Odds of winning items, although the announcement this morning may move to change that, that cost is hidden, and those loot marks mechanics are insufficiently labeled. And another thing I'll mention that came up a lot today, is how quickly the decision to buy a loot box can be made. This is a speedy process, very different from going back to the store and buying another set of baseball cards if you didn't get what you wanted.

Then on this issue of dark patterns. This is something that Consumer Reports has looked at quite a bit. And it's interesting. Its tactics to nudge consumer starts taking actions. Grinding, making the alternative to buying a loot box, doing a lot of relatively pointless work for a very, very, very long time, making it extremely costly on a personal level to not spend that money.

Appointment dynamics, dynamics that build the habit of playing. Using loss aversion and getting people to keep going, keep going, keep going. And get bonuses for playing every day. And pay-to-win, as was discussed quite a lot this morning. Playable without microtransactions, but if you're not willing to spend money, you're not going to do as well as your opponents, or your friends, or you're not going to help out your group.

This problem is both deep and broad. There have been a lot of press reports about gamers spending far more than they intend on loot boxes. People spending thousands of dollars. We've

all heard about the parents whose kids racked up huge charges before they figured out what's going on.

These are actually two separate stories of people who discovered they'd spent more than $10,000 on microtransactions. I raised this story with my son who plays FIFA 19 the hard way without any allowance to spend any money, and I showed him the cost of the loot boxes and his eyes bugged out. It is-- people can spend obviously a lot a lot of money.

And then a growing population of game players exposed to loot boxes and manipulative content. So I think this was discussed earlier today, we're not just talking about young gamers who play all the time. We are now a society of gamers, whether you're playing on your mobile phone while commuting, whether you're sitting in your house playing games for hours, it's a lot of people.

65% of American adults now play video games, and 75% of households have at least one gamer. So this is not an isolated problem set to those young, sort of stereotypical gamers. And then this is intentional in these games.

There's a column written by the CEO of Tribeflame called Let's Go Whaling, A Guide To Monetization Through In-app Purchases. The whole idea of this column is about getting people to spend as much money as they can, and make it so that you're accustomed to it, you're-- this last line to me, you're just a tap away from spending. This is how the games are constructed. This is where the money is made, and consumers aren't necessarily aware of that. And I'm relatively short, because so much of what I talked about came up earlier. Thank you.

[APPLAUSE]

MARY JOHNSON: Thank you, Anna. And now we'll hear from Keith Whyte.

KEITH WHYTE: Hi, everyone. And thanks to FTC, and my fellow panellists, and everyone today for this really informative discussion. I'm Keith Whyte, the executive director of the National Council On Problem Gambling. I've been working on gambling addiction issues for 25 years now.

And as a brief note, I'd like to wish my son, Ian, a happy 14th birthday to day. When he's not playing drums, guitar, bass, or piano, he's often gaming. And he wanted me to tell you, that loot boxes in a Fortnite are occasionally annoying, mainly because he doesn't get the gun he wants. Nothing to do with gambling.

It's so just a little bit about us and why we're here, because we do have a unique perspective on this, I think. We're the national advocates for programs and services for problem gamblers and their families. We were founded in 1972 and are neutral on legalized gambling. And that is very important, because it allows us to work in partnership with government, gaming industry, counselors, regulators, researchers, and recovering gamblers. And we're happy to work with groups like ESA and their member companies as well if they're interested.

Many of the world's largest casino and slot machine companies are members of the National Council, and again, we're not anti-gambling, nor are we anti-loot boxes. However, we're here to share our experience because many features of loot boxes are similar to those of slot machines, and we've got about five decades of experience working on consumer protection issues in the gambling space. Both our experience and the evidence, show that some features of loot boxes are absolutely associated gambling problems among players. My presentation was just going to be everything that David said, but I think I have to do a little bit more than that.

But yes, many of the panellists have discussed the issues we've been looking at as well. And indeed, a number of countries do regulate loot boxes as gambling, or certain types of loot boxes as gambling. But it's clear that whether or not loot boxes meet criteria for a gambling device in a particular jurisdiction, and whether or not parents recognize or understand the risks, additional consumer protection issues-- protection features must be put in place to protect vulnerable players from developing gambling problems. Loot boxes and slots can powerfully influence player behavior in ways that lead to entertainment for most, great excitement for some, and excessive play, and even addiction for a few. Players with gambling problems likely provide a disproportionate percentage of the, quite frankly, massive profits from slot machines and from loot boxes.

To my knowledge-- oops, I think I'm going the wrong way. To my knowledge, every study published to date on the connection between boxes and gambling has found an association. You've heard from Dr. Zendle and others on that today. And in fact, given all everything we know about the similarities between boxes and slot machines, it would actually be astounding and surprising were there not such a connection. They are, in many ways, so closely related.

We know that one of the reasons that, of course, as Dr. Zendle said, problem gambling is an issue, is because it can lead to massive and significant negative impacts. And I'd like to focus a little bit, as we've talked today, about the types of groups that we're most concerned with. Obviously, anyone who plays a slot machine, or anyone who pays to play loot box, may be at some risk, but we know that there are groups with higher risk.

And those certainly include males, youth, and some groups not been talked about a lot today, veterans. We know veterans have much higher rates of gambling problems. And we believe, again, there is likely a bi-directional effect. People who are vulnerable for gambling addiction or who have gambling problems may be more likely to pay-and-play, and develop problems with loot boxes. And those who play loot boxes, may well be on their way to developing gambling problems due to their loot box play.

These are very, very complex associations. Obviously, a lot more research needs to be done. And again, the industry can play an enormously helpful role in providing data to help all of us make more informed decisions about some of these risks.

So based on our experience working with government and the gambling industry to protect players, we've got sort of four of solutions if you will, a number of which have already been discussed, so I won't spend a lot of time on them. And we have much more detailed information

in or written submission, which is, of course, available on our website, and we have we have some copies here as well.

So first, we look at, in the gambling industry, we look a lot about creating informed consumers. And we've talked a lot about-- today, about making and building transparency. And I think one of the challenges to this industry, and one of the ways that you can actually do much better than the gambling side, is if you're spending $250 million to develop a game, and you've got some of the world's best, most creative talent, let's find a way to make this information in disclosure entertaining, and interactive, and exciting.

Build it into gameplay. Reward players for doing some pro-social behavior, like finding out what really the odds are in this game. I would hate to see it look like what a pay table looks like for a slot machine, which is you know 2.5, zillions of numbers in there, and without a degree in higher math, you're utterly unable to understand this.

But there are ways to make this transparency quite effective, especially when you're trying to communicate with younger customers, or parents who are not technically well equipped. And obviously, we talk a lot about, in the gambling space, about consumer education protection. I think, last but not least, we would suggest a rating of most games with loot boxes is M for mature, because, ironically, if many of the parental controls are based on existing ESRB ratings, then most games with loot boxes, including some of the ones we're most concerned about, are rated as T for teen. And so if you're a parent who's based near parental controls on what the ESRB rating is, if the ESRB rating is as we would think artificially low, then that might not trigger the appropriate level of parental controls.

We also, in the addiction prevention world, or in the gambling world, we know that some addiction in some people you can never prevent from developing a problem, right? We must make all the efforts we can to prevent, but just as we have learned from decades of experience with drug, and alcohol abuse, and other things, so while parental controls are important, we need to go beyond that. And one of the things that we do a lot in the gambling industry, is we recognize the role of parents, we recognize the role of industry self-verification, but we absolutely believe that there has to be third party objective regulation.

Sometimes that could take the role of the-- sometimes that could be the role of the FTC. Other times it can be the role of third party groups, like ourselves or others, perhaps some of these panellists. And one other thing on this that's I think important when we talk about certification and verification, nobody in the gambling industry would ever trust a slot machine manufacturer to self-certify that their machines, the odds and randomness of their machines is as-- their machines perform as they say.

So we use independent testing labs. That's what the state of Nevada and New Jersey, that's what everybody uses to verify that the odds are as they are stated. And they often find machines that don't perform adequately. It's an important consumer protection feature, and so if the industry is going to provide us information on odds and randomness, take a lesson from the gambling side, you got to get it done independently. It's not going to be effective if you're just telling us, oh,

trust me, this game, these items drop at this rate, especially without any means to independently verify it.

So we try and prevent as many problems as we can. Those who slip through the net are going to need help. And so one of the things that we will be launching very soon, is responsibleplay.org to help people who have questions, and perhaps problems, find a place to go. As Dr. Domoff talked about, there's a number of flavors, if you will, of addiction that are implicated in this discussion.

There's straight up gambling addiction. There's, of course, gaming addiction, which she went through with the clinical criteria. And there's internet addiction. These are all separate, they're distinct, but quite closely related issues. And what we'd like to do with responsibleplay.org, is help people come take these various self-tests, and then find where they perhaps need to be.

Some people who have problems with loot boxes are probably people have gambling addiction. Some people that have problems of loot boxes may well be gaming addicts. Some people may be internet addicts. Some people may have other problems, and so we want to be sort of a gateway, an information referral resource, where folks can come and then get steered to the appropriate help for their condition or issue.

And again, another tip from the gambling side is self-exclusion. So one of the most effective ways to help someone who may have a problem with their gambling, or with their gaming use, is to allow them to self-exclude themselves. And in an environment where transactions are monitored, you can you can use self-exclusion through payment mechanisms, because while people may have many different accounts and play many different games across many different providers and platforms, they're probably using that one credit card, or at least a common bank account. And so payment level blocking can be very effective. It buttressing and adding to existing platform level controls and others.

Self-exclusion also places a priority, or that places the emphasis on the gambler, or the gamer, and not necessarily the operator. But operators must have an affirmative duty to honor self-exclusion. So self-exclusion is not effective at all when you can walk right through it. So there's got to be, again, that partnership between people who exclude and companies that are going to participate in that program, because the worst thing you can do is set up an exclusion program and then not honor it. And that will bring the worst of both worlds.

So last but not least, we talk a lot about evidence, and we believe it's incumbent upon the industry to help. If-- sorry, if by providing identified data to independent objective researchers to help all stakeholders validate concerns and develop solutions. If video game industry disputes our concerns, they should make publicly available the massive amounts of data they have on player participation and spend on loot boxes that they collect. We, as Dr. Zendle said, we'd be happy to be wrong. We don't think we are.

Again, we've looked at looking through the gambling lens, and with 50 years of experience on this issue, we think there's clearly both cause for alarm and a link between people who pay-to-play loot boxes and people who developed gambling problems. But the only way we're going to really find out who exactly is at risk, and thus how we can create solutions, is to really dig into

this information. So we don't want to identify people by name, so deidentification of data is critical. But we think there are ways to help provide that information to qualified third party researchers, which will help all of us figure out their true-- some of the true concerns.

So in conclusion, with great profits come great responsibility, right? We call on the video game industry to dedicate a portion of loot box revenues to a public health trust fund that supports independent prevention, education, treatment, recovery, and research initiatives. ESA and its member companies can play a constructive and productive role, just as some casinos and lotteries embrace responsive gambling as the most ethical and economical way to address the harm their products cause. It's clear that paying for loot boxes is linked with gambling problems, and that some gamers are at higher risk for addiction due to their age, gender, or even military service.

We know from decades of experience with slot machines and gambling companies, that educational awareness campaigns, a couple of strong responsible gambling or consumer protection policies and programs can help reduce, but never eliminate, the risk of problems. But for these measures to be effective, it will take true commitment of leadership from ESA, ESRB, and every developer and publisher worldwide, because if you have even one company that chooses not to participate, that opts out, doesn't comply with standards, the whole system, the foundation of the entire system is undermined.

In the five decades in gambling, we've learned that self-regulation alone is never enough. It must have an enforceable consumer protection framework, and be companied by external oversight, research, monitoring, and verification by independent groups. So there's a three legged stool, there's a room for industry, for regulators, and for advocates. We look forward to working with anyone who has a sincere interest in preventing addiction and protecting players. Thank you very much.

[APPLAUSE]

WILLIAM DUCKLOW: Thank you, Keith. Ariel, you have the podium.

ARIEL FOX JOHNSON: So good afternoon. I think I'm the last presentation, so thanks all, for still being here, and awake. And also, thank you to the FTC for hosting this workshop today. I'm Ariel Fox Johnson, senior counsel for policy and privacy at Common Sense Media.

So as you've hopefully already heard this morning when my colleague Jeff Haynes was on the stage, Common Sense Media is committed to helping kids and families navigate an ever changing world of media and technology. And over the years, that's grown from helping parents pick out what TV shows might be appropriate for their children, to now helping them understand how to protect their privacy and their pocketbooks as kids are discovering new opportunities, and facing new risks online and in games.

A lot has been said so far today about how children and youth are particularly vulnerable. And I'm pleased about that, that I won't be the only one. I want to just talk a little bit more about what

kids and families know with respect to loot boxes and in-app purchases. And spoiler alert, they don't know a lot. So let's also talk about how we can improve the situation.

So as you've heard today, this isn't just a kid's issue, but kids are particularly vulnerable. There are a number of different reasons why. First, kids can have trouble distinguishing play money versus real money, and games do not make it easy for them by, as discussed, not always listening things in real dollar terms. It's hard for kids and adults to figure out that things can cost real money.

Second, even if information is listed providing real dollar amounts, digital transactions can make it difficult for people to understand that they're spending money. There is very little friction. It's hard to comprehend if you're making a purchase, if you're just clicking online or talking to a smart device, a lot harder than if you were handing over cash. Additionally, the use of microtransactions can compound this problem. To a kid $0.99 to $2.99 doesn't sound like a lot, and they don't think about the fact that they're going to make that purchase 70 times.

When talking about teens, they're neuroscience and other issues to consider. Neuroscientists have looked at how teens brains are different. They're still developing, and this has been talked about a little bit earlier today. Their prefrontal cortex is not in the same shape as in adults, and they're more likely to do the immediate and risky thing to get a reward, and less likely to consider long term consequences. In this space, that means that they're more likely to spend money, and as we've heard, some of them think it feels good. This is just an example of even how in dollars are presented to a purchaser, it can be very hard to read how much they cost, and hard for a child to make a smart decision.

In addition to cognitive and comprehension issues, there are also social emotional issues at play. And companies can take advantage of this. Older kids want to compete with their friends. And we've seen that some gaming companies are filing patents that would take advantage of this desire to compete, contemplating pitting a junior player with a more senior player in an effort to get the junior player to spend more money.

Younger kids, they want to make people happy. They don't want to disappoint their friends, their family, and this also includes their favorite characters. And what I now hope is an infamous example, that you've all heard of, and if not you'll hear of it now, is Strawberry Shortcake insisting that children who are trying to play her game and make treats, purchase certain costly kitchen tool items. And if they don't she'll berate the player.

There are other children's games in which a character will cry if the child doesn't make the purchases recommended. I think it bears noting here, that host selling like this is prohibited on TV. And here you have not only the host selling, but the host getting angry or upset with a child if they're not making a purchase immediately.

Kids can also fall prey to the same type of selling techniques that adults can. So here, if they can read they may go for the best evaluate them. If they're pre-literate, they may just like the pink color.

I think it's important to consider kids purchasing techniques in the broader context of their gaming experience. From our common sense research, we know that some kids are spending a good chunk of time playing video games each day. While a minority of teens and tweens, according to our research, are playing video console games on a given day, I think the numbers are much higher for mobile probably, only 27% of teens play console games. Those who do average over two hours.

Among gamer teens and tweens, they're spending over two hours a day on video games. And those who consider themselves mobile gamers, spend almost as much time. As you've heard today, there are real and growing concerns about addiction on games and via other techniques, not just in-app purchases, but buzzing, and digging, and randomized notifications, snap streaks, autoplay, and other features that tech companies are using to keep us hooked, and Common Sense is focused on these broader issues as well.

If you add that to the thrill and excitement of not knowing what you're going to get when you open up a loot box, and it's really no surprise that, as you heard, the American Psychological Association, the World Health Organization, have identified internet gaming disorder and hazardous gaming as public health issues that merit further attention. So we do hear a lot of concerns from parents at Common Sense about their kids spending too much time online and on games.

And we also hear questions about in-app purchasing. We hear less, as you heard from the ESRB, about loot boxes. I think a large reason for this, is that parents are in the dark. They barely understand in-app purchases in general, let alone specific mechanisms like loot boxes.

Why are they so in the dark? Well, one reason, again, disclosures can be ineffective, in small and tiny print, and you have to click further to see the costs of actual purchases and items. Additionally, parents might not realize that a kid has access to their credit card. They don't know that it's already linked to their online account because they used it for unrelated purchase. They don't know that their kid can access it in their purse, and they might not know to worry about that if they don't realize that the game has in-app purchases to begin with.

While they may get statements, in some instances, such as in Facebook gaming, a number of parents weren't getting any statements at all. And when they do get statements, they'll have sort of vague descriptors, like Facebook or Amazon, in amounts of cents. It could be hard for a parent to tell that that's an in-app purchase or if it's maybe your monthly iCloud storage.

When we talked to parents, they have very basic questions. How do we turn off in-app purchases? How do you find out if a game has them? How do you find out if a game requires them to play? They feel lost.

And for kids-- for parents of kids who've already racked up huge in-app purchases, they feel angry. I think at this point it's sort of-- you've heard multiple times about people spending thousands of dollars in these games whether they liked it or not. And I have family members who was telling me this weekend about spending thousands of dollars on in-app purchases.

One example here, is four kids, all under 10, spent 550 pounds trying to get their favorite football, or soccer player. The parents only realized when their bank card was declined. They were playing a game that was recommended as appropriate for ages 3 and up.

When parents find out that their kids have made these purchases, they respond in sort of a variety of predictable ways. One, they try to get their money back, and a lot of these games have chargeback rates that would be considered fraudulent in other industries. Also, some of these parents turned to the courts. And indeed, in a lot of the examples I mentioned in the last slide, there are about parents who've sued.

Almost all of the major platforms have faced FTC actions in settlement due to deceptive in-app purchases and disclosures. So Google and Apple settled with the FTC, and then Amazon, who first went to court. They're now required to disclose in-app purchases in games. Though, as noted, these purchase these disclosures can be woefully inadequate for parents.

Common Sense and other advocates have also asked the FTC to hold Facebook to the same standard more recently. That issue has not been resolved, and we're concerned that the claim has been extinguished by the recent settlement. So current practices don't seem to be serving kids and families, and we've heard that there are some steps to improve those today, but we think there need to be more.

Thus far in the US, most efforts have focused on transparency. App stores, self-regulatory groups are indicating in-app purchases. Now there's also Google and Apple, and today others who will be disclosing odds, drop rates on loot boxes. Common Sense in our reviews tries to give information to parents about in app purchases, as well as the prices of those purchases when we can. We also note when in-app purchases are so pervasive or manipulative that they might disrupt gameplay or a child's experience, and that's what we call commercialism in a game.

We think companies can and should do more, however. One useful guide here is a UNICEF paper on child rights and online gaming that just came out this spring. It sets out key principles that all game companies could follow to serve children. Companies should help understand--should help children understand the commercial aspects of games, and speak to them in a voice that they and their parents can understand. And I love the idea of companies and their developers being creative and making this something that players and parents want to read and spend time on.

Companies should clearly label advertising and other commercial content. And they should make sure that children fully understand all purchases before they pay for them, and not later when their mom asks how they racked up huge charges. Companies should also be inclusive in their game design. They should make them so that all children can play them, and understand, and have the expectation that children maze the games in a way that they did not intend, and they may play games, even if the product was not designed for them.

Common Sense would like to see companies eliminate features that manipulate kids into spending more money or time than they or their parents were intending. We also think that

platforms should take more responsibility. They are the gateways, and they can do more to flag particularly problematic titles, as well as help ensure that parental controls are the default setting.

As you've heard today, loot boxes are a global concern. They are a concern for many regulators, though there's not always consensus on what to do about this. Belgium and the Netherlands have said that some types of loot boxes constitute gambling, and game studios have responded by pulling out or modifying their games.

The UK has found that some similar practices were not gambling. In China and South Korea, there are rules that require game companies to disclose the odds. This seems like a positive step forward, but some of the odd disclosures that we have seen include ranges of winning certain items that are so broad, like say 5% to 60%, that seems to barely constitute a disclosure at all. So as we move forward and talk about disclosing drop rates and odds of winning, I think it's important that we maybe look closely at what's being disclosed.

In addition, European regulators, Washington State Gambling Commission have also signed joint statement expressing concern. In the US, obviously, legislators and regulators are also taking notice. Senator Haslam asked for the FTC to investigate loot boxes, and make efforts like today's workshop, to educate parents and the public about potential addiction and other negative impacts. And senator Holly, along with Senators Blumenthal and Markey, has introduced legislation to ban loot boxes and pay-to-win monetization practices for those under 18.

There are also broader bipartisan efforts, like the Camera Research Bill, that would study the effects of technology and media, including video games on kids. And at the state level, we've seen a number of efforts, including one Hawaii legislator who's made repeated efforts to ban loot boxes for those under 18 and require odd disclosures, and recently gotten past a commission to study this aspect of the gaming industry in his state.

This is still an emerging issue for many parents, and it's one which many are still unfortunately not aware of. But as it faces increased attention, we're hopeful that efforts from all sides will lead to a better experience for kids and families in the future. Thank you.

[APPLAUSE]

WILLIAM DUCKLOW: Thank you, Ariel. So we're going to jump into some Q&A now, and none of the following questions are directed at any particular panellists, so please feel free to jump in. The first question, that I think we're curious to hear the panellists response to is, this issue of disclosure of odds.

This has come up throughout the entire day. In fact, we actually had announcement by ESA earlier this morning, that additional platforms are bringing this online, joining Google and Apple to kind of make this certainly a trend. What are our panel's reaction to this idea of disclosure of odds as kind of being the way forward here?

KEITH WHYTE: I'll start out and say, we've got a lot of experience with this in the gambling world, and it is not harmful, but unlikely to be effective. Most people don't understand odds and

randomness in the most simple dimensions, especially when you're talking about dynamic odds. It's almost impossible for people to figure that out.

And you have to look at the people you're disclosing to. If it's a young person or someone who's variable the gambling addiction, they're going to understand that information completely differently than a rational, or well-informed, or non-addictive consumer. So again, from the gambling addiction space, there's been few studies that have found much impact on odds and randomness disclosure around slot machines.

It doesn't hurt. It doesn't lead to negative perception, except in some ways if you-- there are ways to talk about odds and randomness within gambling that can actually encourage or lead people into false beliefs. But by and large, I think that information is OK.

It's valuable. It's true. It's factual, and should be disclosed. But I think the next step is to make-- is to find ways to make it sticky and entertaining for consumers, and to make such disclosures impactful. And so I think there's a whole lot we can do to try and find ways to communicate those odds to people in ways that they're going to understand and be able to make more informed decisions. That's the ultimate point.

The point of disclosure is to help improve and change consumer behavior. The disclosure itself is not the point. It needs to lead to something. And that, of course, can be measured and evaluated, and there can be a feedback loop to find better and better ways to do it.

ARIEL FOX JOHNSON: Yeah, I would second that. Say, I don't think a kid is going to make a significantly better decision with certain odd disclosures. And while it's a good step, it can't be a step that replaces more meaningful change.

KEITH WHYTE: Well, another thing I'll say just real quick, is that look at Powerball. Your odds are 246 million to 1. Does that stop anybody from buying Powerball tickets?

No. Some people love to chase long odds. That's part of the thrill.

That's, frankly, part of the addiction for some people. So again, not a magic bullet. A good first step, but it's a first step towards a lot of changing behavior, and that's a much bigger challenge.

ANNA LAITIN: Yeah, I'll jump in and agree with all of that and say, from first inclination it's a good step, but there's a lot of questions about when that disclosure happens and how. If the disclosure only happens at the time you buy the game, and then it's weeks, months later when you're actually playing and encountering the loot box, and how do you have any recollection of that at that time? Is that a meaningful disclosure?

And it's something, Keith was talking about different ways of doing disclosures. I think finding a way that people can really understand what's going on, and that creativity is great, but we have to remember that these games are looking to have people play these loot boxes. And so finding that line, you can be creative in the disclosure, but the reality is they want people to buy these, and so is there a need to disclose in a way that creates some friction, slows people down, makes them

think, and that may, of course, stop them from playing the little boxes, which takes away revenue.

PATRICIA VANCE: I think you have to trust that the industry is serious about making the commitment that they announced this morning. They have their own customers to serve. And they've made a commitment to make disclosures easy to access and to be understandable. And as we learned earlier this morning, loot boxes vary game to game, loot box to loot box, and if there is no one silver bullet for disclosures, there's no one standard, I think we have to leave it to individual game developers to develop the right type of disclosures for their game and for their customers.

I also think it's different disclosures for different audiences. I mean, what you would disclose for a parent, like we just created a blog that helps parents understand what drop rates mean, but it's complicated. And instead of-- I think if-- to make a parent comfortable, we're better off focusing on a generalized disclosure up front that this game enables in-game spending, and then point to parental controls that allow them to limit the amount of spending that their child can enable.

MARY JOHNSON: Just picking up on that point about the disclosure of in-game purchases. We heard today, that some feel that that disclosure isn't prominent or detailed enough. Are their thoughts for ways to-- how would you respond to that? And then also, are their thoughts of other ways to improve upon that to make that more impactful for consumers?

PATRICIA VANCE: You're talking about the in-game purchases notice. I mean, I walked everybody through the rationale for making that decision, and that was the right decision based on our research. So it was informed based on what we were hearing from parents.

Our rating system, at least the upfront information that we provide prior to purchase, needs to be really easy to digest. Otherwise, it's going to get ignored. And so we really try to make our information concise, easy to digest.

We cannot throw a lot of information at parents. They just-- their eyes glaze over. But if they want to go deeper, for an example, we offer rating summaries on our website and through our mobile app. So that if a parent wants to know what do we mean by suggestive themes, or OK, it's teen rated, but I have a 10-year-old, and I really want to make a decision. I want to understand more about the context of the content that we've called out. They can go to our rating summary and read a paragraph or two giving them far more information, far more examples, but we can't expect-- a, we can expect that to be on the box.

We can't expect that information to be up on a mobile screen when you have this amount of real estate. We have to give different layers of information depending on how parents want to digest it, and what parents are looking for. But look, the drop rates is really to serve the gamers. The drop rates are really to provide clarity about the relative rarity and probability of getting certain items in a loot box.

And I think whether-- I think most gamers would understand what that means if they've been playing a game for years. They know what those stars mean. They know what the different terms

are that are being used, whether it's legendary, or rare, epic. And the drop rates, I think, they understand based on the context of the game that they're very familiar with. So I don't think we should underestimate gamers ability to figure it out.

KEITH WHYTE: I think that-- just to add to that a little bit-- I think sort of implicit in the question is focusing on point of sale. And that's akin to when someone sits down to a slot machine or blackjack table saying, oh hey, here's a plaque. You may lose you may lose your money, and this is a random game, or if you go to a bar, you expect your bottle of beer. It's not going-- it can't tell you, point of sale is a very, very limited time for all sorts of reasons to provide this kind of information.

And it really-- the true way to approach this, as with any other public health issue, is through large based awareness campaigns. ESA is starting in that direction. I think there needs to be others.

It's almost impossible. We can't push all consumer edge protection at point of sale or point of purchase. That is there is a time.

I mean there's things we can do there, but it's got to be throughout the lifespan. I mean if we're not talking to kids in schools about this, those measures are not going to be-- again, they're not going to hurt, but they're likely-- they're not likely to be very effective. It's got to be multilayered, multifaceted, multi-year approaches all across the lifespan.

ANNA LAITIN: And I'll add to that analogy. I think it's not sitting down at the slot machine. I think it's entering the hotel in Vegas, and it says, you may end up spending money here. Possibly at a restaurant, maybe at a show, or maybe you'll be at the slot machines.

And that's what's so hard about that contains in-app purchases. As a parent, I look at that. I don't know if that's loot boxes, or you can buy another world sometime later. It could be anything in between. And so to get that level of specificity when consumers are at the point, or when players are at a point where they're accessing that stuff, that's a different moment. The point of purchase is really, really important, and I'm thrilled that that's there, but it's not doing enough of the job.

WILLIAM DUCKLOW: So Keith had mentioned the idea of dynamic odds. And one of the specific types of dynamic guides that we saw come up in comments, is the idea that you could actually guarantee a specific item or a specific rare item to pop up after a certain number of loot boxes. I'm curious what the panel's reaction is to that idea? Does that increase clarity for gamers, or could it actually counterintuitively increase the number of boxes that they purchase?

KEITH WHYTE: I think it absolutely depends on the gamer, right? If you're a kid, if you're, again, vulnerable to addiction, there's lots of people that can perceive those as absolutely exhortations to play. The gambling world, you only have to admit you've lost when you stop playing. So anything you can beg, borrow, or steal to stay in action, you're always one bet away from winning everything back.

If you believe, or you know, or you think you know that additional play or additional spend is going to guarantee you an item, and why would you stop anyway, but especially if you're addicted, especially if you're risk for addiction, especially XXXX. Other players, recreational players, non--problematic players, adults, may be able to see-- maybe able understand the dynamic odds better. And again, that's one of things that makes this hard. You're talking 165 million people, but some of them are people who either have problems or likely to develop problems, and for them, their judgment is by definition impaired.

They are worse at understanding odds and randomness than others. They have cognitive distortions. They have illusions of control.

And providing information dynamic odds in such a way to make them think that persistence is going to allow them to win that epically rare item can be disastrous. That can absolutely be a pathway to gambling problems if the problem is not already there. So again, it's hard to answer, I mean a lot of it depends on the player, in our opinion, because we've seen this happen in the gambling addiction space with devastating consequences for some. And we predict that would be the same within this loot box space.

ARIEL FOX JOHNSON: I think this also just sort of speaks to the recurring theme you've heard today about the need for more research, and different individuals respond differently, and how can we support that.

MARY JOHNSON: So--

PATRICIA VANCE: Can I just-- can I just add one thing? There's is a theme that you know incentives are bad. Rewards are bad.

Games are all about rewards and incentives, and that's what makes them fun, and that's what makes them compelling forms of entertainment. So I want us to be careful about how we frame the conversation. Providing an incentive isn't on its own a bad thing.

It provides challenge. It provides progression, encouragement to progress through a game. So I think it's important to not tar all types of incentives as somehow bad.

MARY JOHNSON: Oh, that's a good--

ANNA LAITIN: Go ahead.

MARY JOHNSON: I think that's a good segue into sort of another question, which is, what about just offering randomized loot boxes for free, essentially? And only available through gameplay. And then instead having specific virtual items, or bundles, or passes available for purchase, sort of á la carte. Why not-- would that solve the problem?

KEITH WHYTE: Not all of it. Not from a psychological model of addiction, no. Whether or not a reward is monetary or not, whether or not how you pay for it, those things or not are slightly salient in addiction, but not entirely. So it wouldn't-- making me boxes free would not remove

the risk that some people will become habituated and conditioned to, and will play them obsessively.

We see this in the social casino space all the time. Free to play social casinos have quite high rates of people who will play til extinction, and get a billion chips, and then they'll spend days and hours playing all those chips to extinction again, so they can go buy more free chips to continue to play, even though they know they will never win anything of value. So no, it wouldn't.

It won't solve-- it might solve some people, but it won't solve the truly vulnerable people for gambling problems. It'd be great if it was that easy. I'd be out of a job, but gambling addiction is a little bit more sticky than simply price.

PATRICIA VANCE: I mean, I do think that would obviously change a lot of the economics. You may find the upfront cost of games to be higher. You may find it has a huge impact on the free to play market, particularly in the mobile market. These independent developers in particular need revenue streams to monetize, to cover the cost of development.

So I think it obviously would have huge impact on the economics of the business, which I think you need to be careful about. Plus, many loot boxes are free and they're optional. So you don't have to buy a loot box to play through a game.

ANNA LAITIN: I think if-- it's interesting that you say how much it would change the economics if people could buy the things they're currently winning in loot boxes. I don't-- I have no studies, no knowledge, but it would be interesting to see how that played out, and how much the reliance on low boxes is necessary for the economic viability of these, because again, if we're talking about warnings, and disclosure, and making sure people are aware, and if paid loot boxes are necessary for these games to continue to exist, that's something-- that alone is something that parents and others should be very aware of, that these games can't exist without these, and that the games are relying on people taking the chance here in order for them to continue to exist.

MARY JOHNSON: A follow up, do you think there should be any kind of cap on the amount of in-app purchases for children and adolescents? So for example, you know you may see bundles that are $99.99, or range anywhere from like $2.99 to almost $100. Would it make any sense to limit the price cap for loot box-- sorry, for in-app purchases for games that are marketed to children and adolescents?

ARIEL FOX JOHNSON: So I think it would make sense to limit or eliminate potentials for spending in games that are marketed to children and adolescents. I do worry that if we say, if you have a loot box, or you have an in-app purchases, you have to rate your game for adults that that might be seen as a get out of jail free card for people who have games that are, in fact, really appealing to 10-year-olds. And so I think you have to sort of consider it carefully, but I think that parents would feel a lot more comfort if they knew that there were limits for their kids spending for a certain age range games.

PATRICIA VANCE: Based on our research, almost the 7 out of 10 parents have rules that their kids can't make any in-game spends. So we believe that parents need to be parents, and set their parental controls, and be informed with the disclosures that we're making, including the in-game purchase disclosures, but other information that we're putting on the box and on the product detail page. I think parents need to be informed, which is why we're doing a lot to try to educate parents, and make sure that they're aware, not just of the disclosures, but also the parental controls, and leave it up to them to set the parental controls at whatever levels that they think is appropriate. But based on our research, the majority of parents are not allowing their children to make any expenditures.

MARY JOHNSON: And then we've gotten a couple of questions from the audience. This one is for ESRB. And the question is, has ESRB found that there's any effect of household income or socioeconomic status on use of parental controls by parents?

PATRICIA VANCE: We've not studied that issue, but I don't know if anybody else here has.

KEITH WHYTE: No.

ARIEL FOX JOHNSON: No.

MARY JOHNSON: And let's see, another one. This one is, why not define the type of purchase consumers do care about whether they will be hit with constant money grabs versus rare or occasional full game add-ons or subscriptions to pay online. So I think this goes to the issue of adding more detail to the type of purchase upfront. I don't know if you have anything more to add than what we spoke about earlier with regard to that.

PATRICIA VANCE: I mean, like I already said, refer you back to the comments I made earlier. But I would also just say that I think that you have to look at what problem you're solving. I don't think the choice to purchase a game, it would be dependent on that information. I think that information is really relevant. Once you're in there playing the game, the most relevant information, at least that we know, for parents from our research with parents, is that they want to know that there's some ability to spend money inside. And then once they bring that game home, hopefully, they'll likely set their parental controls. But that level of detail, I think might be helpful.

But it's helpful only after somebody has made a decision to purchase a particular game. The reason why they're purchasing that game is because there's great word of mouth. It's great game design, really based on a brand that I know my kid loves. There are a whole host of reasons, price point, I mean there's a whole host of reasons why a parent might make a decision to purchase a video game. So I'm not sure that particular information is relevant for that upfront purchase decision, but might be helpful further down the line.

ARIEL FOX JOHNSON: I guess I would just add that in many instances, especially when we're talking about mobile, the parents aren't really purchasing a game. They're clicking Download, and handing over their phone to their kids. And I think one of the things that we've heard from parents at Common Sense, is that they do want to know if in-app purchases is a rare, or

occasional, or even cosmetic, we heard today that maybe that doesn't have as big an effect as we thought. Or is it something where it's like, every time your child wants to advance to the next level, like the Thomas the Tank game, they're going to have to spend money, because a parent might make a very different choice, even though both could be listed as having in-app purchases.

KEITH WHYTE: And just to echo that, as Rene and others have said, I mean loot boxes, this covers just a massive amount of territory. And at some point, yes, providing information on better-- to help everybody better understand the risks. I think there's much more risks in some types of loot boxes, and much less risk in others. It's still risk, but helping weight that is important. But yeah, really hard.

And I don't know that we really know. And I think, again, it's a call, as Ariel said, and as David said, and others, it's a call for more research to help us understand features that are more harmful versus less harmful, help us understand relative risk, and then communicating that relative risk, because risk is not seen equally amongst users. And there's-- yes, it's a great question.

When and where, where's the most effective way to provide that information and to whom. In some cases, it's the users. In some cases, it's the broad public. In other cases-- and sometimes it may need to be tailored very specifically to specific groups. And I think we're only just the beginning stages of understanding this as not a technology problem or a game problem, but as a public health issue.

And if you look at it through a public health lens, I think that points to, again, broader prevention, educational initiatives, more of a public conversation around this. And then layered with lots of different tools for lots of different audiences, delivered at lots of different times. Point of sale being one, but not the only, and probably not even the primary. Just as you wouldn't expect your first lesson about alcohol or driving drunk to be delivered when you walk into the bar, when you walk in the hotel in Vegas.

That starts really early and continues throughout your life, because the risk changes as people change and mature. And we have even talked about seniors, but we've talked a little bit about cognitive development and neurocognitive development. But there's a lot of evidence to suggest that seniors may be at higher risk for negative consequences in some of these things as well, and it's not just kids.

WILLIAM DUCKLOW: So I think the final two questions we have today are more broad. First off, simply put, can the concerns that we've discussed today regarding loot boxes and other types of in-game transactions, can those be addressed effectively through industry self-regulation, or is some type of legislative action required? And then beyond that, what might cause the calculus of that answer to change in the future?

KEITH WHYTE: So from our perspective from 50 years of working in the gambling industry, self-regulation alone, no. It cannot be effective. Especially, when there's so much profit involved, and there's so little understanding of both risk and rewards across this global ecosystem.

So yeah, we were comfortable with the three legged stool on the gambling side. Industry self-regulation plays a really, really important role, and we partner with a number of gambling companies directly. But we also partner with regulators in this space, like the FTC. And as a objective, independent, nonprofit advocacy organization, we're the third leg of that stool. We play a big role in helping keep the industry honest.

It's you know trust, but verify. And my counterparts, the left and right probably will also play a role. And so, that's the approach that we would suggest based on, again, our experience with the gambling industry.

ANNA LAITIN: I'll echo that. I think there's a lot that industry self-regulation can do. And I think ESRB has taken some really important steps. But the chance of this being solved entirely by self-regulation, given the broad nature of the industry, given the size of the problem, and given the concerns that have been express today, I think there'll be a need for more than just that.

PATRICIA VANCE: Obviously, I think self-regulation has worked very well, and the Federal Trade Commission has looked at our industry over the years, and has written in their reports to Congress that we have the strongest self-regulatory code. In high compliance with that code, I think we've proven ourselves over the last 25 years that we can do an effective job self-regulating and addressing particularly parents' concerns.

But I would just add one more thing. This is an incredibly fast paced industry. We move really fast, and our self-regulatory system moves very fast along with it.

When we need to make changes to the rating system, we do. When we make changes to the marketing guidelines, we do. We are continually adapting and evolving as the industry evolves.

I don't think regulators can keep up with the industry, and I really fear that should regulations come to pass, by the time they're passed they'll be obsolete, or they'll be completely impractical. This is a really complicated and very fast moving industry.

ARIEL FOX JOHNSON: And I guess I would just say that, I don't think that self-regulation can keep up with the entire industry either. So I think everyone has to play a role.

MARY JOHNSON: So last question. Let's say, we're all going to get together again in five years, what do you think the key consumer issues would be at that point related to microtransactions? Are we still going to be talking about loot boxes at all? So what are your what are your predictions?

KEITH WHYTE: No.

ARIEL FOX JOHNSON: No.

[LAUGHTER]

KEITH WHYTE: Yeah, well if David and I are right, then we're going to see a spike in gambling addiction. And so, yeah, I think we'll still be talking about them, unless we really all team up to take aggressive action. And that-- I don't know. I wouldn't give it odds, but I think there's some good-- there's some good bones there. So there's some framework that we could build on if everybody really wanted to come together.

ANNA LAITIN: I think we'll still be talking about transparency, consumer confusion, parental misunderstanding of how things work, kids being ahead of their parents. I don't know if we'll be talking about loot boxes, in particular. But as I started my presentation, this is part of-- this is not something that's specific to games.

The marketplace is getting more complicated. Pricing is getting less transparent. Purchasing is becoming more frictionless, leading to various different problems and some fabulous solutions. So we'll be talking about similar concepts, but I have no idea what it'll look like.

ARIEL FOX JOHNSON: Yeah, I agree. I think the technology might have shifted a little bit, but a lot of the concerns will probably remain the same.

KEITH WHYTE: That's true.

MARY JOHNSON: Well I want to thank all of you for participating on this panel, and everyone who has been here today. I'm going to turn the podium over to Mary Angle to give some closing remarks. Thanks so much.

PATRICIA VANCE: Thank you.

[APPLAUSE]

MARY ENGLE: OK, good afternoon, everybody. I'm Mary Engel. I'm the associate director for advertising practices here at the FTC. Thank you all for hanging out to the bitter end, and I promise I'll be brief.

First of all, I would like to thank all of the panellists who appeared today for the time they took preparing for their presentations, and for presenting their research, and the insights they provided today. I've found it really interesting and very helpful. I'm just going to try to kind of quickly provide an overview of what we heard today.

I think, first of all, we heard that loot boxes are just one type of in-game transactions, and that there are many different flavors and varieties of loot boxes. Loot boxes do have a number of benefits. They enhance gameplay. They make it possible to play games for free.

They help to keep game prices low, pretty much the same price over time despite inflation. But despite these benefits, we've also heard concerns about them, about their potential for addictive behavior and the evidence of correlation with problem gambling behavior. We heard concerns expressed about whether game companies are engaging in predatory behavior by using

knowledge of individuals particular game play to maximize the likelihood that consumers will buy a loot box, and whether this increases the likelihood of addiction.

We heard concerns about dark patterns being used with games. Things like grinding, appointment dynamics, and pay-to-win, and other techniques that might increase the likelihood that consumers will actually buy loot boxes instead of just playing without buying them. We heard concerns about it is difficult for people, both adults and children, to know actually how much money they're spending because of the way the pricing is presented in the games. And we heard that problem gamblers spend a lot of money on loot boxes, and that holds true, even more so, for adolescents.

There were some analogies to baseball cards, and whether this is a relevant analogy was debated. It was pointed out that perhaps not because loot box purchases are more frictionless, and are not correlated with problem gambling-- that baseball cards are not. We heard about research showing that people buy loot boxes for their functional value, but that that is not inconsistent with they're also being linked to problem gambling.

We've heard that the gaming community is very diverse. And actually that 65% or so of Americans do play video games. But the gaming community has mixed feelings about loot boxes. They mostly feel like that they are like gambling, and are concerned about how easy it is for kids to spend money, and how hard it is for parents to control this.

Gamers also have mixed feelings about government regulation, because they don't trust the government to get it right, and are concerned about the impact any such regulation would have on jobs in the industry. So they suggest instead perhaps guidance and best practices being provided. We heard a lot of concerns about loot boxes, for children in particular, and a discussion of research showing that parents have very limited interaction with their kids regarding their mobile devices, concerns about internet gaming disorder, where gaming interferes with a person's daily functioning in terms of work school or interaction with relationships, not just in terms of time spent playing games.

And we heard about the various parental controls that the industry does provide for consumer-- for parents to control how much time or how much money their children spend on games, and as well as the educational information that the ESRB provides. And yet, we also heard that is very challenging for parents to navigate all of these controls, and all the different ways, and platforms that children may play games, and that there's more parental education is needed. More guidance could be provided on these issues.

There was also a suggestion that there needs to be more research and public health evidence to understand the extent of any problem in this area with respect to gambling or addictive behavior, and to help develop solutions. We heard ESA announce a new initiative to disclose the relative rarity and odds of winning virtual items. That would be put into effect for new games and game updates. This news was generally welcome, but considered as a good first step and not a panacea to the problem.

There were concerns for people with gambling problems, that odds aren't going to really matter to them, and certainly whether children would understand that or care about them. There was some discussion about also that the odds of winning would need to be independently verified, because the companies have incentive to lie about what the odds of winning are. They'll make more money if they do that.

There was also some discussion about how meaningful that disclosure is really, and whether-- at what point the disclosure would be most helpful to consumers. That point of sale is good, but how about down the road, when people are long into gameplay. And also a discussion of really disclosures to parents or other adult players, versus disclosures to children, and those being two different kinds of things.

Finally, there was some discussion about whether self-regulation would be enough here, or whether legislation would be needed. And we heard a variety of speakers here, both yes and yes on both of those. So the FTC is going to be taking this all in. We heard a lot of really valuable viewpoints today.

People are also submitting comments online and we'll be reviewing those as well. So I know we have a lot to look forward to. And I want to thank everyone, again, for coming today and, again, to our panels for participating.

[APPLAUSE]