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PROFESSOR: OK. All right. So today's reading was the "MDA" paper by Robin Hunicke, Robert Zubek, and Marc LeBlanc. I hope you found it pretty light reading because it was intended to be pretty light. And the whole point of it was that we will be getting through this pretty quickly today so that you have time to sit with your teams, talk about your project, work on it a little bit.

All the prototyping materials that are in front I'm going to be putting the boxes on the tables. Are you more or less seated with your teams right now? More or less? OK. Every team represented-- let's see. You are the building team. You guys are the-- which?

AUDIENCE: I'm also builder.

PROFESSOR: The different building team.

AUDIENCE: The LEGOs, yeah.

PROFESSOR: Right. The LEGO building team, OK. Which team is that?

AUDIENCE: [INAUDIBLE]

PROFESSOR: The what?

AUDIENCE: [INAUDIBLE]

PROFESSOR: The head of the information team.

AUDIENCE: Thievery.

PROFESSOR: The thievery, stealing stuff?

AUDIENCE: The pap building. Pap building.

PROFESSOR: Oh, you're the pap building. OK. All right. So, all right, cool. I'll type it here, great. Hopefully we'll be able to make a little bit of progress on your teams on your projects. So who managed to play a little bit more of the games, whether it was the prototype that you played on

Wednesday or whether it was something else you developed along the way. Who managed to get some playtime? OK, a few people. Who did you play it with?

AUDIENCE: So we went back to the drawing board and redid new games.

PROFESSOR: OK

AUDIENCE: Exploring. So we just played them amongst ourselves.

PROFESSOR: Among yourselves? OK. Who did you play with?

AUDIENCE: Just different people in my dorm.

PROFESSOR: OK. [INAUDIBLE] basically, right? Anyone else? Did anyone else do? Yep.

AUDIENCE: I mean, we went through a couple more iterations--

PROFESSOR: Just within your team?

AUDIENCE: Yeah.

PROFESSOR Yeah. OK. Did you play an iteration that you didn't develop yourself? Did anyone? It's like, if you played within your team, obviously-- OK. So if you played a version that you hadn't developed yourself, or if you played it with other people who were developing the game with you, how do you-- what were some of the things that you felt about the game? Or what did people say about your game once the game was done? What did people seem to like or not like about it? What were some of the things that they were saying.

AUDIENCE: It didn't end.

PROFESSOR: It didn't end. OK, all right. What else? It could have been negative feedback. It could have been, wow, this is terrible because, blah. What was the blah? Or it could have been, wow, that was kind of cool because of blah. Nothing? Nobody gave you any feedback? They just kind of sat there, passively, while you're making them play this?

[LAUGHTER]

OK, well, I was hoping that that was a segue into a little talk about aesthetics, actually. Maybe what I'll do then is, I'm gonna make you play a game. A shot game. The game that you will see-- who's played it before?

AUDIENCE: The game on the screen?

PROFESSOR: Yeah, Oasis. Also note it's Defense of the Oasis, which is easily confused with DOTA, but it is not DOTA. All right. If somebody would like to volunteer to play through an early easy level while there's a lot-- you know what? You all get a chance to play it through one round, because each round's pretty fast. So we'll start with you and then we'll go on then, OK? And then, everybody else pay attention because I guess he's pretty much playing the tutorial level.

So this was only designed for the PC. It was actually one of the-- came out roughly-- you could just go ahead and play-- it came out roughly about the same time as casual games, downloadable, casual games, picking up on the market. I don't think it was ever sold as a boxed product, or if it was, that really wasn't the point of its business model.

AUDIENCE: There were people following me.

PROFESSOR: So you click around.

AUDIENCE: I can probably figure out. Oh, this is really the point of figuring it out. That one. That happened.

[LAUGHTER]

AUDIENCE: I just keep walking.

151.

AUDIENCE: Already searched.

[MUSIC PLAYING]

AUDIENCE: Oh, it happened again Already searched.

[MUSIC PLAYING]

AUDIENCE: You should do something clever.

[MUSIC PLAYING]

PROFESSOR: So notice the trends are going down.

AUDIENCE: Yeah.

[MUSIC PLAYING]

AUDIENCE: Water.

[MUSIC PLAYING]

AUDIENCE: They like music, don't they?

[MUSIC PLAYING]

AUDIENCE: OK.

PROFESSOR: Big shiny thing.

AUDIENCE: How do we increase population?

[MUSIC PLAYING]

AUDIENCE: Yay.

[MUSIC PLAYING]

AUDIENCE: Throw that towel.

PROFESSOR: Look, notice this guy is down there.

AUDIENCE: I am watching you. Oh, hey, hello people.

[MUSIC PLAYING]

PROFESSOR: So this actually turns out not to be the tutorial level. This just turns out to be the first level.

AUDIENCE: The way most people play-- why don't you use the tutorial?

PROFESSOR: That's true. People don't like playing tutorials, that's true.

AUDIENCE: So we find these four technologies. The barbarians are here? Why are they-- no, they're not.

PROFESSOR: You have 22 turns and about two barbarian hordes are arriving.

AUDIENCE: So basically, movements is turn, and I'm just walking.

PROFESSOR: Yeah.

AUDIENCE: So people-- I should walk to an area I've already discovered? Over here. Oh, I did something clever! I don't know what I did.

[MUSIC PLAYING]

AUDIENCE: [INAUDIBLE]

AUDIENCE: I don't know what to do. I'll just walk here and watch things go bad.

PROFESSOR: Barbarians are coming. Capture the city. Move troops there.

AUDIENCE: Move here. Yay, 94 people. Can I move other people?

AUDIENCE: Try.

PROFESSOR: Try.

AUDIENCE: No more troops. No more troops. No more troops. We're all going to die. 333. [LAUGHTER]

AUDIENCE: Oh, I thought this was supposed to be me learning how to play.

AUDIENCE: Yeah, learning. Feel the learning.

[LAUGHTER]

AUDIENCE: You have to use your technology.

AUDIENCE: Yeah, can you use any?

AUDIENCE: I'm tapping on technology. I'm tapping Hannibal. I'm tapping spear. I'm giving it all my love, and it's not doing anything.

[CRASHING AND YELLING]

AUDIENCE: I think I won.

[LAUGHTER]

AUDIENCE: Come on, man, you got this.

Kill her.

AUDIENCE: Whoa. What did they do?

AUDIENCE: Oh, snap.

[MUSIC PLAYING]

AUDIENCE: What?

PROFESSOR: OK. So you did, in fact, complete the level. But you're probably [INAUDIBLE] about what happened here. How do you feel at the end of that level right now?

AUDIENCE: Like I'm good at touching squares, but that doesn't mean much. Like all I knew was if I found cities I'd tap them again and I could search.

PROFESSOR: OK.

AUDIENCE: That's all I found.

PROFESSOR: OK. That's what you figured out about the rules, but how do you personally feel about this game right now? I mean, you only played one level, and clearly the game goes on.

AUDIENCE: I feel like it's somewhat impossible to control the ending situation because I have no way of determining or upgrading my population.

PROFESSOR: OK. All right. So [INAUDIBLE] control right now.

AUDIENCE: Yeah. Or like I have no influence, so I'm just one dude exploring the map.

PROFESSOR: OK. So lack of influence maybe. Lack of influence, or possibly lack of control, something like that. All right, so next person. We're going from right to left. So you're next. You're going to play level two, taking in everything that you've seen so far.

AUDIENCE: Oh, crap.

AUDIENCE: Like you saw, you can tap on purple areas that are--

AUDIENCE: Purple area to explore-- so I tap that. OK.

PROFESSOR: Anyone has-- any ideas about what he should be doing, go ahead and say so. He doesn't have to play this on his own.

AUDIENCE: So the question mark--

AUDIENCE: I'm doing this. I want to discover every square.

AUDIENCE: Just go to the--

AUDIENCE: Now that you know-- double-tap cities.

AUDIENCE: Oh, double tap cities?

AUDIENCE: Yeah just tap them again, you'll search them. Ta-da!

AUDIENCE: Oh, you got--

[INTERPOSING VOICES]

AUDIENCE: That's probably good. I don't know if you asked him.

AUDIENCE: Go to the question mark!

AUDIENCE: He'll get there. He'll get there.

AUDIENCE: Should I go save the question mark?

AUDIENCE: Yes.

AUDIENCE: But then I'm gonna [INAUDIBLE]

[INTERPOSING VOICES]

AUDIENCE: Every movement is one turn no matter how far apart it is.

AUDIENCE: Oh.

[INTERPOSING VOICES]

AUDIENCE: --do it in one straight. You have to go one purple square at a time.

AUDIENCE: Yeah, but say I wanted to skip all the squares [INAUDIBLE]

AUDIENCE: You're gonna wait one turn where you discover it anyway.

AUDIENCE: Yeah, it doesn't matter.

AUDIENCE: Oh.

AUDIENCE: You don't use a turn if you're not discovering?

AUDIENCE: Oh, look at that-- discover right beneath it. That mountain does something. I don't know what it does but it gives you ten people.

PROFESSOR: What do people think that does, where he put 20 people? When you click on the mountain, what do you think happened?

AUDIENCE: It's not about 20 people.

[INTERPOSING VOICES]

AUDIENCE: --technology.

PROFESSOR: OK. Go right ahead. Do whatever--

AUDIENCE: You can put in a lot of people.

PROFESSOR: I don't know if that's good or bad. I wait turns.

AUDIENCE: [INAUDIBLE]

AUDIENCE: We're not seeing people form at this stage.

AUDIENCE: Keep running around.

AUDIENCE: Whoa.

AUDIENCE: Yeah. See, look. Now I'm still one turn.

AUDIENCE: Wait, do I lose followers when I do that?

[INTERPOSING VOICES]

AUDIENCE: We're investigating.

AUDIENCE: Yeah, I do.

AUDIENCE: Oh! But I got something. I got archers. I like archers.

AUDIENCE: Clearly because you have enough people. Bows increase your chances of afflicting damage on the barbarians. Good. Keep doing that stuff. I wonder-- it looks like there's--

AUDIENCE: Whoa, I'm huge.

[INTERPOSING VOICES]

AUDIENCE: Oh, look at that! I don't know that means but you found another technology.

PROFESSOR: Looks like-- I have no idea what that-- oh, helmet!

AUDIENCE: [INAUDIBLE]

AUDIENCE: Oh, another city. Greetings. [INAUDIBLE] I'll join your cause. That means this is supposed to be a campaign game and last over a long period of time.

AUDIENCE: What's that thing right there?

PROFESSOR: What thing?

AUDIENCE: The tent looking thing.

[INTERPOSING VOICES]

AUDIENCE: Yeah, you can't double click it so you just wait--

PROFESSOR: Over there?

AUDIENCE: --until the end of the turn.

AUDIENCE: Damage. Dude, good, another city.

AUDIENCE: [INAUDIBLE]

AUDIENCE: How do you add people?

AUDIENCE: I should have searched more.

AUDIENCE: Kevin, what else is falling apart?

AUDIENCE: Oh, look that's the animation that [INAUDIBLE]

AUDIENCE: Oh, you got more technology than I did. Very nice.

[INTERPOSING VOICES]

AUDIENCE: Predict routes in the city.

[INTERPOSING VOICES]

AUDIENCE: --half that they're going to say?

AUDIENCE: Two [INAUDIBLE]

AUDIENCE: [INAUDIBLE]

AUDIENCE: Oh.

AUDIENCE: They survived.

AUDIENCE: Helmet for falling rocks.

AUDIENCE: All right, here we go. Let's do it! Go, go, go! Aw.

AUDIENCE: Boo!

AUDIENCE: You should not put so many people on the line.

AUDIENCE: Oh! Barely survived.

AUDIENCE: I won?

AUDIENCE: Yeah.

PROFESSOR: So how do you feel about that?

AUDIENCE: I feel awesome, but I have no idea what happened.

PROFESSOR: OK.

AUDIENCE: The greater the number of cities that are connected together by roads, the faster they all

grow. That dude built roads, and we don't know how.

AUDIENCE: Maybe he--

AUDIENCE: Wait, did he actually?

AUDIENCE: Yeah, he had roads before.

AUDIENCE: Did he?

AUDIENCE: Yeah, you saw him light up and connect. All those things were basically roads. You had the dudes moving along it. It's population increased in size. Our population has yet to increase in size.

PROFESSOR: I think you [INAUDIBLE] before class about it.

AUDIENCE: Yeah.

PROFESSOR: OK. So you feel awesome, but you're still not sure what--

AUDIENCE: I still don't know what's going on. I do know that exploring is very good.

PROFESSOR: OK.

AUDIENCE: I figured that one out.

PROFESSOR: So there's some sort of exploring. It's good for something.

AUDIENCE: I got zero points.

[INTERPOSING VOICES]

PROFESSOR: OK.

AUDIENCE: And I got zero, too, but mine went from negative above.

PROFESSOR: There's still a lot of confusion going on, OK. All right.

[SIDE CONVERSATION]

PROFESSOR: I think it's showing you how the points are added.

[INTERPOSING VOICES]

PROFESSOR: So how was that round?

AUDIENCE: It was fun. I wish that I could see-- I think there was a way to see which city they were going to attack first. I didn't know what it was. I forgot. Also, I feel like it's sort of pointless that you have to click on a city again to explore it. I always want to explore it, as far as I can tell.

PROFESSOR: OK. All right. So you feel that there is some redundancy going on?

AUDIENCE: Oh yes.

PROFESSOR: OK. All right. All right, cool. Thank you very much. So these are kind of the things that, as players, you know, the sensations that you get. Right? You get kind of the joy of exploring, finding out new things, pushing back the fog.

And the beginning of learning again, this confusion, this befuddlement. You don't actually know how your actions are changing things. But if you play a lot of games, you are usually sort of primed to accept a little bit of that. And sometimes it's balanced well enough that it sort of intrigues you rather than puts you off. But sometimes it just puts you off.

Someone said that it felt good to save people. You described it as feeling kind of fun. In the paper there are some different ways how we can describe fun. It's just eight different types, but even in the paper it states it isn't meant to be a comprehensive list. It isn't meant to be a list that's exhausting every single option out there.

It's just to show that there are different kinds of fun when you play a game-- like exploring things, or inhabiting a role, or overcoming a challenge, or just passing time in a way to alleviate boredom. Sorry, I have a bit of cold so my speech is a little bit stunted today.

There are a number of game mechanics in here that generate some of these sensations. I want to put aside about confusion and lack of other influence right now, because some of that's addressed in the tutorial. If you went through the tutorial, it explains to you what all of the actions were. You probably wouldn't feel quite so confused about what you could do.

However, I think it's reasonable to address the lack of control that you might feel, even after knowing what you could do. Right? These are the things that people would describe as

aesthetics. The thing that the player feels. The paper describes them as desirable experiences.

That's not necessarily always the case. It's not always desirable. I'm pretty sure that confusion was not a desired experience that the designer of this game wanted you to have. By the way, one of the designers of that game is actually one of the writers of this paper, which is why we're playing this game in particular.

So these are aesthetics. Let's talk about some of the mechanics of the game execution. Hit the screen and bring it up. So let's talk about some of the mechanics of this game. Someone describe it.

AUDIENCE: [? Turn waits. ?]

PROFESSOR: OK, so [? turn waits. ?] The game waits for you until you make a decision. It's not real time. Is it not real time?

AUDIENCE: [INAUDIBLE]

PROFESSOR: Huh?

AUDIENCE: It waits.

PROFESSOR: It waits?

AUDIENCE: Except for when you run into barbarians, right? Don't you have 10 seconds or something to--

[INTERPOSING VOICES]

AUDIENCE: 10 seconds is actually [INAUDIBLE] and collect more.

AUDIENCE: They do that over the course of the game.

AUDIENCE: Yeah, but like the countdown doesn't start until you send your troops.

PROFESSOR: OK. All right, so the truth is until you make your final move, right? And then the 10 seconds where it counts down and you see things continue to happen. OK, all right.

AUDIENCE: There's combat.

PROFESSOR: There's combat as a mechanism. There's some sort of AI combat. Right? You don't actually directly tell your troops to attack. You just place them ahead of time, and then they just wait at each other, using some sort of algorithm, some sort of computation on how that number, of how that addition works. What else is in the game?

AUDIENCE: Exploration.

PROFESSOR: Exploration? Go ahead.

AUDIENCE: [INAUDIBLE] how you prepare for the attack.

PROFESSOR: So how do you find cities? How do you find cities?

AUDIENCE: You just have to walk on top of it.

PROFESSOR: OK. So you click on the purple squares. And then that shows you what is underneath the purple squares. It will defog. It's not full of war, exactly, but they have a sort of unexplored fog, right? Which you have to disappear. Is that the only clue about how to find a city?

AUDIENCE: Question mark.

PROFESSOR: Sometimes you get the question hint. Right? And there's something there.

AUDIENCE: There's like lush terrain around cities usually.

PROFESSOR: Farms actually. It's hard to tell on the screen, but on the iPad. Do the farms-- all make the cities. So if you step on something green, you realize, wait a minute, there's a city somewhere nearby. It's kind of Minesweeper-esque in that way. What else?

AUDIENCE: The oasis?

PROFESSOR: What was that?

AUDIENCE: The oasis.

PROFESSOR: OK. So what about the oasis?

AUDIENCE: You're also looking for it. As soon as you hit one of the squares of the oasis, you can more or less figure out where the other ones are.

PROFESSOR: OK, because?

AUDIENCE: It seems to always be in the same 3 by 4 rectangle.

PROFESSOR: So the oasis--

AUDIENCE: You see like a corner of the river, then you know it's flowing this way and then that way, right?

PROFESSOR: Yes. Well, the oasis is always a rectangle. So if you find a corner, yeah, you know that if you follow those things then--

[INTERPOSING VOICES]

AUDIENCE: You know it's grass on this side, water on this side. So it's always inside.

PROFESSOR: Right. So if the grid was like that, the moment you find one corner, then you know which way to explore. So the oasis gives you clues. The title of your oasis alone gives you clues. It is the same way that the farms give you clues about the cities.

AUDIENCE: [INAUDIBLE] because we were trying to decide whether or not we should use technology, or to build roads, or outfit the cities with defense, or whatever.

PROFESSOR: How do you all take resources with this game?

AUDIENCE: You just have it, I guess.

PROFESSOR: You just have it, and what happens when you attack?

AUDIENCE: Certain actions [INAUDIBLE]

PROFESSOR: So you have a limited number of followers, and tapping assigns them to spend them, basically, to get them to follow some sort of task. So limited followers, tapping assigns. Assigns the followers. OK. Other ones?

AUDIENCE: There's the scoring at the end?

PROFESSOR: Scoring at the end.

AUDIENCE: Which is a summary in some sense. It seems to be different from what actually-- like when you end the level, you get a feeling of, did you do well or did you do not well. And then it didn't always correspond with the score.

PROFESSOR: Right. The score is unnecessary. So the score is kind of different from what the game is immediately giving you feedback on. The score is kind of like a completely different kind of feedback.

AUDIENCE: I actually disagree that the score was like that. So I was very confused when we won the first level, because everyone died. But we got a score of zero, which kind of makes sense. And when I went a bunch of people died, but I still passed the level. And that made sense because I had two cities left. And I still got a score of zero because I lost tons of people.

Then when we made it so we didn't lose a single city, we got a score of 1,000 or something. We didn't lose a single city and we had a lot of people. I thought the score made sense, maybe the level progression didn't.

AUDIENCE: Nathan lost some cities and still had a score of about a thousand or so.

[INTERPOSING VOICES]

AUDIENCE: You lost-- you didn't get any points, and you didn't discover anything.

AUDIENCE: There you go. So the score makes sense.

AUDIENCE: Also I was going to say that he said that the score was possibly accumulative over all the phases done. And the score [INAUDIBLE]

AUDIENCE: [INAUDIBLE]

AUDIENCE: There was another mechanic. We didn't really get to discover it. But it was like glowing, O-A-I-S-I-S.

PROFESSOR: Right. Clearly leading to something we haven't figured out yet. OK.

AUDIENCE: There was a special follower that we got that kind of like stalked us.

PROFESSOR: OK. I think they call them experts or advisors or something of that nature. What was the advantage of doing that? Having followers return?

[INTERPOSING VOICES]

PROFESSOR: So she started and you had more. All right?

AUDIENCE: Here's a question. Every level that we [INAUDIBLE] We had two of them along the side.
[INAUDIBLE]

AUDIENCE: It said that in one of the tutorials [INAUDIBLE]

PROFESSOR: OK. So there's some sort of [INAUDIBLE] with [? wind, ?] you know? [INAUDIBLE] Right?

AUDIENCE: There were also these little blue orbs that got transported into the artwork.

PROFESSOR: Right.

AUDIENCE: And I have no idea what that does.

PROFESSOR: So where did those blue orbs appear? Did anyone notice?

AUDIENCE: When you were uncovering the tiles I want to say.

AUDIENCE: But when you searched, if you didn't get one of those technologies at the top, you usually got a blue orb that would go up. Otherwise, I do not know what that blue orb does. He got lot of blue orbs.

PROFESSOR: When you pick up the oasis-- when you walk over the oasis, you get blue orbs. So the oasis also gives you blue-- which makes sense. It's like the bluest thing on the screen, and then when you click on it, blue things move. So there's some sort of color coordination thing.

AUDIENCE: The barbarians steal your blue.

PROFESSOR: I know where this meme is going.

AUDIENCE: Oh, I was thinking that the blue--
[INTERPOSING VOICES]

PROFESSOR: Oh, yes, yes, blue.

AUDIENCE: The one time they got to the oasis, something happened where everyone-- all the blue went to the barbarians.

AUDIENCE: It looks like it was a last line of defense.
[INTERPOSING VOICES]

PROFESSOR: So either the barbarians are taking away your blue, or you're using your blue to smite the barbarians. Either way you end up with no barbarians and less blue. Right.

AUDIENCE: Do you think if that happened, we got down to zero blue, we would lose the game?

AUDIENCE: Yes.

AUDIENCE: That was my guess. There had to be some way to lose, but we couldn't figure out how.

[INTERPOSING VOICES]

PROFESSOR: You were at level four on like 15.

AUDIENCE: 13, I think.

PROFESSOR: I can tell you one of the things that this particular game designer has told me is that he doesn't believe in game balance. He just believes in making a game start so ridiculously easy and end at an almost impossible level. So somewhere along the way you meet the level that you're good at, and that's a balanced game.

AUDIENCE: [INAUDIBLE]

PROFESSOR: That's one way of looking at it. So we've identified a bunch of games mechanisms. We didn't go into things like roads and technologies and mines and stuff like that. There's a ton of game mechanics in here.

These are the kind of things that a game designer can design, right? These are rules. Things as simple as the oasis is always in a rectangle. There's no reason for that. It could have been a river. But you're right. There is actually a rule in the game.

Every time you find an oasis, it's always going to be of a rectangular shape. These are the things that a designer designs, and you get dynamics out of a bunch of these mechanics interacting with each other.

So I'm going to give one example of a dynamic. One of the dynamics is that as you reveal information about the stuff that is underneath the fog, you start having more decisions to make.

What's your next step going to be. Because you could click on the thing that you just discovered. Like if you find a city, one of the things that people were telling everybody-- search

it right now! Right?

But then you can also find a mine, and you're going to find followers into it. You could build a road, and some people I think might have noticed what road is this. Did people find out about anything about what road is this?

AUDIENCE: They gave you more people, I think.

PROFESSOR: Yes.

AUDIENCE: I think one of the pop-ups said.

PROFESSOR: Your cities start actually growing in number when you connect them on the roads. And of course that helps with defense in the long run. So one of the dynamics in this game is that the further that you play in a level, the more kinds of decisions you're going to make.

At the beginning of the game, you can make no decisions besides which one of these two squares am I going to start searching. Up or left. I think you always start in one of the corners, so there are only two directions that you possibly search. What other dynamics are there? These are things that arise out of a combination of these mechanics.

AUDIENCE: Would one be huge kind of pre-perform a set of actions, like your exploration, you're searching and whatever. And then, after that, you just kind of let it go, and the barbarians come and do their bidding?

PROFESSOR: OK. So one of the things is you set up initial conditions for, hopefully, things to work out, for sort of the systems to emerge in the behavior, in the long-term behavior. OK.

What else? That's actually a dynamic, in this case. That's something you set up even before all your turns are over. Like you said, people in a mine-- the miners just keep digging each turn. You don't have to babysit them. They'll keep digging. And they'll find stuff without you telling them to do anything.

What else? What else fits this kind of description of something that arises still kind of mechanically out of a combination of all of these dynamics? Let's say combat, for instance. When the red forces and your blue forces start, you know, like little ants start facing off against each other. What happens?

AUDIENCE: Like really snowballing. Like really snowballing.

PROFESSOR: Right

AUDIENCE: It would start off kind of even or so. And then all of a sudden one force would just take a nosedive.

PROFESSOR: Uh-huh?

AUDIENCE: At one point, the two forces were even, and then one got up to like 90, and one just started dropping and dropping. And this one just stayed at 90. You can see that too with the really small cities that have like 20 people or something that get like squashed.

PROFESSOR: Squashed, right? So it has this interesting curve. On like a successful defense, the barbarians are usually here, and the followers-- you usually have a slightly lower number, because a huge number of barbarians that show up all of a sudden--

AUDIENCE: But we have technology.

PROFESSOR: Yeah. But often what happens is that you've got a number like that, and it kind of goes like that. Right? It starts off kind of like the barbarians still maintain your numbers, then all of a sudden it just collapses. This is what a successful defense in that game looks like.

AUDIENCE: But you can also flip that curve. Not necessarily flip it, but the followers can also take that kind of curve.

PROFESSOR: Oh, yeah.

AUDIENCE: Instead of just below the barbarians.

PROFESSOR: Oh, yeah. Totally. That would be what an unsuccessful defense looks like. That will look more like that, and then it's like bleh. Right? There's usually more barbarians than there are people.

So this is all arising out of the game mechanics. Right? This is not an aesthetic experience all by itself. This is just how the numbers, if you plotted by a fraction of a second by a fraction of a second, you'll get a graph. This is just the algorithm doing its thing.

All right. What does this kind of-- I'm going to go back to a successful defense. So this arises out of the mechanics of the game. Everything that you do in the game to get salt, get followers into a city, get them technologies, mine stuff, search cities. Make sure there are enough

followers by connecting the cities up with roads.

The other thing that roads allow you to do is redistribute followers between cities that are reconnected. That's the thing that you get to do in those last 10 seconds is that you don't just assign everybody that you've got. All the people, go into this one city. You can actually do that and connect them up with roads. You have 10 seconds to do that.

So everything leads up to how many followers you've got in a city that the barbarians are going to attack, right? You know there's this interaction that keeps going on until all the barbarians are destroyed. Then you get this curve. And what part of the aesthetic does this generate? What does the player hopefully experience because of that?

AUDIENCE: You cheer for your forces--

PROFESSOR: Yeah.

AUDIENCE: And then you feel disappointed when things start going bad, and you kind of feel for them.

PROFESSOR: Yeah. And then when they pull out of it, because they're not like, yeah! At this point it's like we are both kind of in the same trajectory. Sure they're dropping, but we're dropping too. Things aren't going so well, and then all of a sudden your folks come through, right? We were cheering. We were shouting our heads off, as if our cheers had any influence on the outcome.

I'm not quite sure how to describe that aesthetic, but that's what the player takes away from this game, right? There's this tiny little moment of the game. It's actually very finely tuned to generate exactly that experience. You're not quite sure what the outcome of this battle is going to be.

I like to play the game for hours and hours and hours, and then you can kind of predict what's going to happen the moment the battle starts, because you already know what each technology agent does. But at this point in time when you're still learning the game, you don't know what each technology does. You don't know how the battles are going to turn out. It gets really, really exciting.

So maybe there's a kind of-- how Marc LeBlanc, the designer of this game, described it was dramatic tension. I'm not quite sure if he's using that term exactly how it would be used in literary convention. But in this view it does feel tense, because there's an uncertain outcome about who's going to come out ahead, and then when it resolves in your favor, you feel great.

That's basically one dissection using the MDA framework that we just went through.

There's a whole bunch of mechanics that create a dynamic that creates an aesthetic experience. Which is the thing that you want your players to have. In this particular case, this is explicitly what Marc LeBlanc wanted his players to experience. He wanted them to cheer for the followers, even though that has no impact on the final result of the fight.

So when you look at your games, I want you to be asking your play testers what they're feeling about the game. Usually after they're done. Say how do you feel about that, what did you like about the game, what didn't you like about the game. Both are aesthetic experiences that come out from the play of the game. This is much easier to do with people who are actually not in this class, because you're all thinking about the games from the rules level.

If you go to somebody who plays games but doesn't really make games or isn't in the process of learning about how to make games, it's a lot easier for them to just think about well, I kind of felt crappy, because I didn't feel there was any way for me to come back in this game, you know. Or, yeah, I felt like I was [? roleplay ?] stomping everybody. [? Roleplay stomp ?] is an aesthetic.

Those are things that you can sort of take that to game designers, give you clues on whether your game is doing what you want it to do, for the mechanics that you're designing, whether the game is not doing what you want it to do, because maybe the mechanics are interacting in a way that creates a dynamic that you didn't want, or maybe the game is really not what you wanted to do and it's actually pretty cool.

There's always the accidental discovery of your mechanics doing something that you didn't quite expect. Maybe you expected something to be kind of like cool and strategic and detached, but then your players end up feeling really tense and feeling that everything is on the line and everything could go wrong at any moment and they like that.

OK. All right. That's something you can work with. But you may not necessarily understand that's what your game is doing if you're not asking your players what's the sensation that they're getting out of the game purely from the rules.

When you're working with the prototypes in particular, it's very easy for you to make this connection back to your mechanics, because they can be experiencing terribly much from your artwork or from the sound effects, right? Unless you make your sound effects like a

mouse, or something, and then it probably sounds pretty goofy. But they can only really get the aesthetic experience out of your rules.

Obviously this is not the only way that you can convey an aesthetic experience. You can do things through art, sound, storytelling, characters, plot, and everything. We'll go into that a little bit more before assignment two, because you're going to be exploring that with assignment two.

But there's this one particular kind of aesthetic, which I will refer to it in this class, as system aesthetics. The aesthetics that come out from the system of all of your mechanics working together. And, in this project, this first assignment, you don't have to worry about hitting the design aesthetic. You don't really have to. That's not the goal of this project. I want you to figure out everything that your game mechanic can do.

And by the way, there was a question at the beginning of class, what if we wanted to change the mechanic because you discovered something along the way. That's fine. But whatever you change it to, make sure that you're going deep into that thing. Make sure that you're not just running with what you stumbled with, and then not developing it any further. Try to really, really explore what you eventually will declare that you're looking at.

The reason for that is I want you all to have the experience of going really deep into mechanics and figuring out all the different things that one mechanic can do. So that later on when you all mix and match, and form them into assignment two and assignment three teams, you've got like a pool of knowledge and more importantly a pool of experience in sort of exploring what a mechanic can do.

So you can take on new mechanics, you can share information with each other and use that later to generate interesting aesthetic experiences. Because in the end, this is what the players are here for. They don't care about the amount of work that you put into here. They only care about whether the game makes them feel the way that they want to feel right now while you're they're playing your game.

So any questions? Nope. OK. Well we'll probably go a little bit more into things about mechanics later this month, but right now the rest of the class is actually time for you to work as a team. Some of you probably haven't seen each other since Wednesday and may not necessarily have talked to each other. So that's fine.

Take time now. If you've got something that you need tested, you have two options. One, you can grab Rick and I. Or two, you can grab other people in the classroom who may not necessarily have saved their game out. Suggest asking people who haven't played a game for two tests.

But tomorrow is actually the formal play test. So what you absolutely have to have Friday end of this class or what you have to have by the beginning of tomorrow towards that is something that can be played as a big class. Today there's no required play test. Tomorrow there is. All right?

There's also reading for tomorrow, but it's not that bad. I think the total number is-- let me just make sure of that. Oh no, it's only part of it. Yeah. It's going to be just looking at one thing, which is the randomizing and add a functional dice in games. So, OK. Work in your teams. And all the materials right here we'll put it on the table.

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