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POLICY ANALYSIS EXERCISE

The Future of Work and Play in Asia

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Table of Contents

Executive Summary

From December 5th through 7th, 2022 in Bangkok, Thailand, The Future(s) of Work and Play workshop was held by the Digital Asia Hub and Konrad Adenauer Stiftung Political Dialogue Asia. This workshop brought together experts across industries and disciplines to explore the future of digital technology through the concepts of play and work.

This report draws on the questions and content generated from the workshop in order to articulate predictive findings about the future of work in play in Asia, as well as questions for further research and exploration for the client this report was prepared for, The Digital Asia Hub. This report presents three broad case studies as a method for exploring the potential future of digital technology and how it will shape the relationship between work and play:

The first case study interrogates "play-to-earn" cryptogaming, which frames play as a method of generating income, and which this report identifies as largely unsustainable and damaging to the meaning provided to us by both work and play.

The second case study explores a virtual reality technology that has been shown to increase empathy and pro-social behavior and expands on this benevolent power of VR to make predictions about how powerful VR may become in influencing behavior more generally as more and more work and play activities are carried out in VR environments.

Finally, the third case study looks into Decentralized Autonomous Organizations (DAOs), which is a form of organizational structure based on digital technologies that allows for a decentralization of power and decision-making. This case study explores the implications that this technology may have for how we structure our work and play activities, and perhaps how we may govern them differently in the future.

There are three key findings in this report, based on these case studies:

It will become harder to differentiate between work and play activities.

Specifically, play activities will start to become commodified and associated with work. This phenomenon is rooted in our conception of work as generally tied to compensation and driven by goals and underlying structure. As play activities are increasingly tied to compensation and underlying digital structures, play activities will feel less playful.

Communities and institutions may become more decentralized.

Working and playing in digital worlds will mean that the structure of our organizations may change. Current conceptions of how a company is run, and how governments function, could change radically as they are adapted to fit the digital communities, technologies and activities that allow for greater decentralization of power and rule-setting.

Digital structures that remain centralized may have more power and influence over users.

If digital spaces are going to be governed by centralized structures, there may not be transparency in terms of what the underlying rules and infrastructure are. Considering how convenient and immersive VR technologies may become, this could have massive implications for how we relate to work and play, if we are spending a fair chuck of our time doing these activities in a virtual world that has a centralized organization governing it.

Introduction

Context and Client

The Digital Asia Hub (DAH) is an internet and society non-profit research tank based in Hong Kong. DAH focuses on independent and interdisciplinary research that explores the challenges and opportunities related to digital technology.[1]

As part of this investigation into digital technology, from December 5th through 7th, 2022 in Bangkok, Thailand, *The Future(s) of Work and Play* workshop was held by the Digital Asia Hub and Konrad Adenauer Stiftung Political Dialogue Asia. This workshop brought together experts across industries and disciplines to explore the future of technology through the concepts of play and work. Participants set out to interrogate how our relationships to both work and play will evolve as life becomes increasingly enmeshed with emerging digital technologies.

The goal of the workshop was to produce meaningful questions and lines of inquiry which would provide the foundation for research projects and other forms of collaboration going forward among participating members. Digital Asia Hub intends for the questions and research areas generated to be a springboard for a year-long "festival" of events related to questions of work and play in a digital context. This report draws on the questions and content generated from the workshop in order to articulate predictive findings about the future of work in play in Asia, as well as questions for further research and exploration for the year-long "festival" of events.

Defining Work and Play

There is often much ado about the "Future of Work," especially in a post-pandemic world that relies increasingly on remote and digital workspaces. However, very little attention is paid to how *play* as a human activity may change as life becomes increasingly digitized. This project undertakes three broad case studies in order to gain some insight on how the relationship between work and play change when they are conducted using new technologies.

To investigate work and play in the context of new technologies, they must each be defined. At first blush, their relationship seems simple. We often think of work and play as opposites. When asked to define the relationship between work and play, most everyone will dig up a definition that relies on at least one of the concepts of enjoyment, obligation, and/or compensation. There is a reigning presupposition that work is something that (1) is unenjoyable, (2) that you are obliged to do, and (3) that you are compensated for. Play is defined in contrast as something that (1) is enjoyable, (2) is done purely for the purpose of that enjoyment, and (3) is not compensated. But the second that these instinctual definitions are tested, they fall apart.

We know that sometimes the activities that we are paid for— officially labeled as "work" — can be pleasant. We can find enjoyment in the satisfaction of completing a project or a day of work, and sometimes also genuinely enjoy the work itself. We find a lot of meaning in our lives through our work—feeling like we are part of a larger whole, contributing to the function of society, or proving our capabilities. There is a long list of reasons why work is enjoyable—perhaps almost as long as the reasons that it is unenjoyable. And this leads to a not insignificant number of people continuing to work even if they have no financial obligation to or working much harder than they need to without additional obligation or compensation.[2]

We also know that sometimes when we are doing an activity that would normally be defined as play, we are having a terrible time. For example, playing a game of cards with your friends, but finding it incredibly distressing that you are losing and wishing for the whole

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[1] "Mission and Scope," Digital Asia Hub, n.d., Date accessed: April 2nd, 2023, https://www.digitalasiahub.org/mission-and-scope/

[2] Larissa Faw, "Why Do the Mega Rich Continue to Work?," *Forbes*, January 29, 2013, https://www.forbes.com/sites/larissafaw/2013/01/29/why-do-the-mega-rich-continue-to-work/?sh=5809049c7e2f

thing to be over. Note also that, even if everyone was having a grand time, the person who wins the pot in the game of cards is indeed being compensated for their time—a small example that troubles our close association between compensation and work. Or alternatively, consider having a drink with a friend but finding them grating and wishing that you could leave. Why do we stick around for these unpleasant "play" situations? Well, some kind of social obligation keeps us from leaving. Perhaps we could explain this by saying that sometimes activities that *could* be play end up being work because we do them out of obligation.

However, it is clear that this definition of the difference between work and play that relies on compensation, obligation, and pleasantness is not steadfast. Work and play tend to have a definition akin to the highly subjective "I know it when I see it" concept, even while we can perhaps agree on the general contours of how to define these terms.

Philosopher Richard Burke attempted to wrestle with the infamous trouble of defining the difference between work and play. He posits that perhaps the fundamental difference between work and play is that work is done in pursuit of an end goal, and play is something that is done without purpose and for its own ends.[3]

Burke contends that something doesn't have to be boring or unpleasant for you to be doing it as work. However, work is always an activity that amounts to a larger whole. It doesn't necessarily need to be on the worker's mind at all times that what they are doing is a means to an end, but the end goal will be part of how the underlying structure of the activity is governed. There must be some level of a consciousness of the goal at hand, and effort towards that goal. This goal-oriented definition of work seems to be tied to our associations between work and compensation (with the monetary reward as the goal), as well as the components of obligation and unpleasantness that are involved in working towards a goal.

This also means that the same activity could be considered either work or play, depending on the "underlying structure" it is being subjected to.[4] For example, playing a song that you know on an instrument would be playful and fun. Practicing an instrument, perhaps, is enjoyable and engrossing, but it is something that you do to achieve the end goal of being able to play that instrument better, rather than for the *pure ends* of playing the instrument just to play the instrument. This would be considered work. Or, for example, learning the rules of a boardgame so that we can play it with our family. The learning the rules part, in Burke's structure, would be work, while you would be playing once you had grasped the rules and gotten into the game.

Burke's work gives a framework for understanding work and play; it allows us to understand that virtually all activities can be considered work or play, depending on the context: whether there is an underlying goal-oriented structure of discipline involved with the activity, and that this context can change very quickly, to the point that perhaps we do not even notice the change.

This would suggest that perhaps we slip in and out of work and play mindsets even within incredibly similar activities, depending on context, mindset, and objectives. Therefore, to define the difference between work and play is a difficult task. This project explores whether digital technologies, and their use in work and play activities, will make that definitional blurring more or less intense.

However, when talking about the future of work, as we often do, we are frequently overwhelmingly concerned with economic consequences above all.[5] By bringing in the concept of play to the conversation, this project seeks to direct some specific attention at how human wellbeing will be impacted by our increasing contact with digital technologies. We often, intuitively, associate play with leisure and wellbeing—especially since play is seen as the antithesis to the effort and strain of work, particularly of wage labor. It is also interesting to note that play is often thought of as a way to rest or recharge for the purposes of going back to work to be more productive than you would have been otherwise.

Through the work *and play* lens, then, a concern with generating more time and space for play (aka leisure), while reducing the amount of time and effort spent working or being in a workplace would be part of the conversation and the overall goal of structuring our world around new digital technologies.

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[3] Richard Burke, "'Work' and 'Play'," *Ethics* 82, no. 1 (Oct., 1971): 33-47, https://www.jstor.org/stable/2380259

[4] Ibid.

[5] "What is the Future of Work?," *McKinsey and Company*, January 23rd, 2023. https://www.mckinsey.com/featured-insights/mckinsey-explainers/what-is-the-future-of-work

However, with such a fluid definition of work and play, how do we define what activities we would want to prioritize as we build a future economy around digital technologies and workspaces? It doesn't seem so simple to try and prioritize play and leisure since we can't point to exactly what it is. How do we ensure that a digital future includes human wellbeing?

To answer this question, we can perhaps look at what is happening neurologically to a human when they are enjoying an activity—whether it is work or play. What makes a task engaging, restful, or meaningful? If we can engage with digital technologies in a way that enhances the elements of our daily activities as engaging, restful, and meaningful, we can perhaps hope to improve human wellbeing with these digital technologies.

The Flow State

There seems to be a biological and psychological state associated with an activity feeling pleasant and meaningful. Most everyone can recognize the feeling: being completely absorbed in what one is doing, to the point where you lose a sense of time and cease thoughts about anything other than the task at hand. You lose your sense of self and have no self-referential thoughts. You feel in control and united with the activity you are completing. We experience this feeling in both work and play activities. This state of mind is known as the "flow state," as coined by Hungarian-American psychologist Mihaly Csikszentmihalyi.[6]

It seems that the key to achieving the flow state is a match between skill level and challenge level. If an activity is far too difficult for an individual, they will become fearful or frustrated. For example, skiing down a steep incline when you are a beginner will not induce the flow state—more likely you would feel panic. On the other hand, if an activity is too easy, you will not become engaged with it, and will feel bored. But when the activity is matched to our skill level (or at least to our perceived skill level), it is possible to achieve that complete absorption that is characteristic of the flow state.[7]

For the purposes of this project, the concept of the flow state will serve as a mechanism by which to get at the idea inherent in our desire to preserve the meaning brought to us by work and the recreation brought to us by play. The preservation of viable economies is the primary concern of conversations around "The Future of Work." However, this project seeks to observe and interrogate human meaning in balancing work and play activities, and how digital technologies will either preserve or damage this meaning. The concept of the flow state provides a tangible grounding for measuring (or estimating) how effective a technology will be in generating this state, and therefore making both work and play more enjoyable, productive, and meaningful.

Eastern Philosophy on Work and Play

This project also focuses on digital technologies and their influence in Asia. To this end, it may be useful to orient these subjects around fundamental Eastern philosophy and worldview, as it can differ significantly from the typical Western conceptions of work and play: work and play are seen as opposites; work is done for survival to allow for the leisure of play.

In Eastern culture, however, there are many examples of philosophies that frame work and play as interwoven. For example, Zen Buddhism emphasizes the concept of "samu," or working meditation, in which one performs their daily working tasks with complete focus and

[6] Joshua Gold and Joseph Cioriari, "A Review on the Role of the Neuroscience of Flow States in the Modern World" *Behavioral Sciences* 10, no. 9 (Sep., 2022): 137, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7551835/

[7] Ibid.

mindfulness, almost as if meditating.[8] Japanese Zen Buddhism has a concept known as "mushin," which means literally "empty mind," in which all thoughts and desires are emptied from the mind in favor of complete focus on the task at hand. Within Zen Buddhism, mindfulness and ease are prioritized in both work and play contexts, with language that is highly suggestive of the psychological concept of the flow state. This ease and mindfulness that is associated with desirable approaches to work allows for work to be genuinely playful and peaceful in a way that is often not condoned in Western culture.

Spatially, in Asia, work and play are difficult to separate as well. The Asia-Pacific region accounts for 65% of the entire world's home-based informal workers[9] (defined simply as workers that produce goods and services in or near to their own homes).[10] In Southeastern Asia specifically, home-based work is a full 18 percent of total employment.[11] Note that this lack of separation in work and leisure spaces precedes COVID-19 changes. The above statistics are from survey data from the years 2000 to 2019. Note for comparison that in January 2019, the share of all work in the American economy that was performed at home was a mere 4.7%.[12] This may contribute to concepts of work and play as interwoven as well.

A final note of philosophy with which to frame the following case studies: the Western frame of thought, as articulated by Alan Watts, can be understood through the lens of Ouroboros—the ancient snake depicted with its tail in its mouth as it continually eats itself. As long as the snake does not recognize that the tail that it is eating is its own, it will continue to devour and digest itself for eternity. The moment that the snake realizes that its mouth and its tail are the same, it would cease to eat itself and slither off. This is the same as how work and play are understood—that work and play in fact are not different, and the moment that we realize this (as a society) we are freed from the pain that comes from attempting to separate them. Eastern philosophy has veins of thought that are suggestive of a conception that leans toward this idea that work and play are the same or at least in some ways inseparable. This project interrogates how digital technologies will either strengthen this conception or weaken it as modernity progresses.

[8] "Samu: The Dynamic Expression of Zen Practice," *Upaya Zen Center,* April 29th, 2019. https://www.upaya.org/2019/04/samu-the-dynamic-expression-of-zen-practice/

[9] Florence Bonnet, Françoise Carré, Martha Chen and Joann Vanek, "Home-based Workers in the World: A Statistical Profile," *Women in Informal Employment: Globalizing and Organizing,* January 2021, chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://www.ilo.org/wcmsp5/groups/public/---ed_protect/---protrav/---travail/documents/publication/wcms_771793.pdf

[10] Ibid.

[11] Ibid.

[12] Daniel de Vise, "Nearly 30 percent of work remains remote as workers dig in," *The Hill,* February 20th, 2023, https://thehill.com/policy/technology/3862069-nearly-30-percent-of-work-remains-remote-as-workers-dig-in/#:~:text=The%20COVID%2D19%20pandemic%20transformed,market%20since%20World%20War%20II.

Case Study 1: Play-to-Earn Cryptogaming

The phenomenon of Play-to-Earn cryptogames provides an ideal case study into the definitional and spatial blurring between work and play that is likely to occur as access to digital technologies increases. Cryptocurrency games, or crypto games, are video games that are built on blockchain technology.

The blockchain is essentially a digital record of information. The information stored on the blockchain is usually a record of a transaction or purchase—the blockchain is the underlying structure that is used to allow the functioning of cryptocurrency. As people purchase things with cryptocurrency or exchange it for other currencies, the blockchain allows for a running chronological record of those transactions to exist. The unique aspect of blockchain technology is that this record of information is stored by many people and many computers. When a transaction takes place, a digital record known as a "block" is made. Each block that is saved to the blockchain is tied to each of the blocks of data that came before it. It is impossible to alter or delete data within a block, as it would require you to alter the data of each block that came before it, on all the different computers that it is stored on. This makes the transactions within the blockchain secure.

A good way to think about it is perhaps as if the blockchain was a shared document stored on many people's computers. Like a Google Doc, when one person adds data to the document, everyone else with access to the document will notice the change. However, in the case of the blockchain, not only will everyone notice the change, but they also must approve it to ensure that it is valid, and there is also no way to go back and change data that someone else added. In this way, since the data is stored on many computers and validated by many users, the transactions that take place on the blockchain are secure and decentralized.[13]

Cryptocurrencies utilize this technology to provide a currency that has its transactions transparently, securely stored and verified in a decentralized database.

Crypto games, or blockchain games, utilize cryptocurrency technologies to facilitate in-game interactions and transactions. Many of us are familiar with typical video games, in which you can earn "money" in the game, that you can use to buy exclusively in-game assets (a new car to drive around in the game, or a smart new hat for your character to wear).

In the case of cryptogames, actual cryptocurrency is earned through a variety of in-game activities. "Play-to-earn" models provide payment of a cryptocurrency in exchange for actually playing the game—completing missions or tasks or selling in-game virtual assets.[14]

This means that, through in-game "labor," such as completing missions or tasks, trading, and selling, players are able to earn cryptocurrencies that they can use to purchase real-world assets or trade for traditional fiat currency. As a result, these "ludic-" or in-game economies have relationships with and implications for tangible real-world economies.

Some crypto games utilize pre-existing cryptocurrencies such as Bitcoin and Ethereum within their in-game economies. Some developers use their own proprietary bitcoin that is built specifically for in-game transactions. While proprietary cryptocurrencies are not as liquid as the more popular pre-existing cryptocurrencies, their implementation comes with more control and revenue for developers. It also provides for less friction in transactions for players (they can integrate the cryptocurrency directly into the game, which they cannot do with someone else's cryptocurrency).

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[13] Sam Daley, "What is Blockchain?," *Built In*, September 1st, 2022, https://builtin.com/blockchain

[14] Serada, A., Sihvonen, T., & Harviainen, J.T, "CryptoKitties and the new ludic economy: how blockchain introduces value, ownership, and scarcity in digital gaming," *Games and Culture*, 2020, https://doi.org/10.1177/1555412019898305

The blockchain itself, and associated technologies that are built on top of it, have been touted as revolutionary for the way that finance, governance, and digital communication operate.[15] In particular, these "play to earn" games have been framed as an activity that turns play into work, allowing one to get paid for video gaming activities— for play. But is this a sustainable model? And what impact does this blending of work and play have on our conceptions of each?

Below is provided an analysis of one such game, known as Axie Infinity, and a look into how it has impacted the Philippines.

[15] Serada, A., Sihvonen, T., & Harviainen, J.T, "CryptoKitties and the new ludic economy: how blockchain introduces value, ownership, and scarcity in digital gaming," *Games and Culture*, 2020, https://doi.org/10.1177/1555412019898305

Spotlight Analysis: The Cryptogame Axie Infinity

Angelo Reyes[16] sits quietly, looking at his screen. He squints at the three bulbous animated creatures that float up and down in front of him, at the ready. He clicks his mouse to send one forward: a pink marshmallow-looking animal wearing a tangerine as a hat. It bounces forward playfully and uses its tail to deliver a prim smack to its opponent, which has a piece of bamboo for a horn. The creature crumbles, converting itself into an animated ghost with a shame-faced expression. Reyes has just won the game—and gotten paid.

Reyes is playing Axie Infinity, an online Pokémon-like game. Axie Infinity is a play-to-earn cryptogame: as you win battles, you get paid in cryptocurrencies that can be traded for real-world money. It is just one example of a flood of games that are purported to be changing the fundamental nature of work and play through this play-to-earn structure. However, this vision may not be sustainable. Despite how revolutionary it sounds, play-to-earn games may be reliant on some familiar forms of exploitation, directed at vulnerable communities.

Reyes is from Negros Oriental in the Philippines, and like many in his community he got involved with Axie Infinity during COVID-19. The familiar story of COVID-19 quarantine shutdowns and financial fallout was particularly salient in Filipino neighborhoods.

With physical workspaces shuttered, Filipinos were left scrambling for digital solutions. Reyes, who was employed in two of the Filipino professions hardest hit by the pandemic as a farmer and construction worker,[17] says he started with Axie Infinity to get food on the table for his family when he was unemployed during COVID. Back then he made just 500PHP (just over $9.00 USD) a month, while he now makes 1500PHP (about $27.00 USD) a month from working just 3-6 hours per day on Axie Infinity. He is one of 2,800,000 active daily players of the game.[18]

How can a game that pays you just to play be sustainable for developers? For one, there is an entrance fee. All players must buy three Axie monsters before they can start playing and earning. During a peak for Axie Infinity last year, it cost upwards of $1,100.00 just to scrounge together those three precious monsters and start playing.[19] This unfortunate situation of high entrance fees has generated an accusation that games like these are eerily similar to a Ponzi scheme.

It may be hard to believe when looking at the playful, rounded aesthetic of the game, but it has real in-game economics with consequential real-world results. The value of the Axie monsters goes up as more people demand them. So as the game becomes more popular, that means more people are buying more monsters for more money. This makes it profitable for the people who already own Axie monsters to sell. But this profitability cannot be maintained unless there is a continual inflow of fresh players keeping the price up. Sound familiar?

The high cost generates another point of worry as well. Those who can't afford the out-of-reach price of the monsters rent them from businesses. In exchange, the business requires you to play the game a certain number of hours a day while taking a cut of all your earnings. They call this arrangement a "scholarship." Reports of the percentage of this cut range from 10 to 50% of the player's income. The most widely recognized business renting out these unassuming

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[16] This name has been changed to anonymize the participant and protect their identity

[17] Ditte Fallesen, "How COVID-19 impacted vulnerable communities in the Philippines," *World Bank Blogs*, November 10th, 2021, https://blogs.worldbank.org/eastasiapacific/how-covid-19-impacted-vulnerable-communities-philippines

[18] Sky Mavis, 2021, https://www.skymavis.com/

[19] Joshua Foust, "Addressing the policy challenges raised by NFT gaming," *The Brookings Institute*, July 12, 2022, https://www.brookings.edu/techstream/addressing-the-policy-challenges-raised-by-nft-gaming/

digital characters is called Yield Guild Games (YGG), which started in the Philippines during the COVID-19 pandemic.[20]

In high-production shots of lush Filipino towns, set against jazzy lo-fi music, Yield Guild Games presents YouTube interviews of their scholars. Each of the stories include the same theme: an emphasis on the community provided to them by YGG. Indeed, entering the Discord chat for the company provides an immediate flood of messages of people wishing each other good evening, sending animated GIFs, answering technical questions. Audio "rooms" host players laughing and chattering along in Tagalog. It all seems so friendly, wholesome, modern.

Players seem happy enough. Casual-corporate types in expensive t-shirts at the helm of cryptogame development proclaim that play-to-earn games, and cryptocurrency generally, will revolutionize the human relationship to work by commodifying play— freeing workers from controlling, cold institutions. "Games with real, player-owned economies will become places where we live, work, and play – true digital nations," claims Sky Mavis, owner of Axie Infinity.[21]

The economic landscape of these games is more reflective of a pyramid scheme than the new virtual frontier that the cheery outwards projection and the associated promises around play-to-earn cryptogames would suggest. Over 35% percent of players hail from the Philippines,[22] where economic underdevelopment leaves them willing to accept lower pay.

The owners of these games and their assets seem far removed from the lived reality of daily game play. Udonis reports that Axie Infinity has generated over $2 billion in sales,[23] while the average monthly income of those in the Philippines playing Axie Infinity is just $400 per month.[24] As revenues amass, Filipinos in low-income communities click a bright screen repeatedly to survive. The monotony of these games is excruciating for most, even for those who found it genuinely enjoyable in the beginning.

Owners of the games and their assets aren't the only ones profiting from this structure. Professionals can make a living from getting in on these games early and using bots to complete monotonous digital labor, investing before the Ponzi scheme comes unraveled and the value of in-game assets crashes. When the flow of new players inevitably slows to a trickle, in-game prices and return on in-game investments drops rapidly. Those who paid high prices to play are unable to make their money back, let alone secure a return on that investment. An employee familiar with this process told me: "There's probably not much they [developers] can do to fight the crash to be fair to them. All in-game economies are hard to maintain, and on top of that these games are all inherently Ponzi schemes."

Those that invest in in-game assets to increase returns are left holding the bag when the value crashes. The decision is either to take on that risk, or fork over a considerable portion of their earnings to the "scholarship" manager.

Angelo Reyes decided to take the safe route—the only route he could afford—and get a scholarship with Yield Guild Games. He reports that he recently logged on to Discord and Axie Infinity to get to work, only to find that all trace of the group-chat for his team and the Axies he had been allowed to play with were gone. With no explanation. He is left without income.

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[20] Yield Guild Games, Last accessed April 2, 2023, https://yieldguild.games/

[21] Robert Hoogendoorn, "Sky Mavis Becomes Investor in NFT Games," *Play to Earn*, March 10, 2021, https://www.playtoearn.online/2021/03/10/sky-mavis-becomes-investor-in-nft-games/

[22] "Life changing or scam? Axie Infinity helps Philippines' poor earn," *France 24*, February 15th, 2022, https://www.france24.com/en/live-news/20220215-life-changing-or-scam-axie-infinity-helps-philippines-poor-earn

[23] Mihovil Grguric, "Sky Mavis's NFT Game Generates $2 Billion in Sales," *Udonis*, March 3rd, 2023, https://www.blog.udonis.co/news/sky-mavis-nft-game-generates-2-billion

[24] Vittoria Elliott, "Some Axie Infinity players amassed fortunes—now the Philippine government wants it's cut," *Rest of World*, September 30th, 2021, https://restofworld.org/2021/axie-players-are-facing-taxes/

As illustrated in this spotlight analysis, there is a bit of danger in this framing of a game (play) as a way to earn money.

For one, it seems that something happens to our relationship to a genuinely playful activity when we define it as work and begin to rely on it as income. In the case of Axie Infinity, for players that are playing for income, that is the sole reason they play it. There is no real value-add to society in playing these games. The assets that their gameplay generates (new Axie monsters) are not adding anything of true value to the world. These assets could be generated automatically by the makers of the game by a simple change in code. As play activities are meant to be (or at least typically understood to be) something that is done for its own end, making it a "job" would imply that these jobs would inherently be unproductive, or "bullshit jobs," as anthropologist David Graeber would define it—jobs which are so pointless that even the person doing the job cannot justify its existence.[25]

If life, work and play all become more digital, it could be projected that more and more work activities could not only be 1) increasingly pitched as simply play, and thereby tainting our relationship to what we believe play and leisure bring to our lives, and 2) that more and more jobs would become "bullshit" jobs, as generating digital content can be difficult to defend as truly meaningful and productive.

Technology writer Paul Butler makes the argument that "floors don't need to be swept in the metaverse unless they are designed to need sweeping."[26] Digital jobs like these are designed to be intentionally boring, to the point that players who can afford to pay some other player to do that task do just that.[27] This makes the task more playful for those that can afford it, and generates completely meaningless work framed as play for pay to the people who are doing these unproductive digital tasks.

[25] Sean Illing, "Bullshit jobs: why they exist and why you might have one," *Vox*, November 9th, 2019, https://www.vox.com/2018/5/8/17308744/bullshit-jobs-book-david-graeber-occupy-wall-street-karl-marx

[26] Michal Jirásek, "The dark side of crypto gaming guilds," *Frontiers in Blockchain*, September 1st, 2021, https://www.frontiersin.org/articles/10.3389/fbloc.2022.965604/full

[27] Ibid.

Case Study 2: Virtual Reality, Empathy and Bias

Virtual reality (VR) immerses the user in a computer-generated three-dimensional environment. Users can interact with the virtual world by utilizing real-world physical tools such as headsets and handheld sensors. In the context of work and play, VR is set to revolutionize how users engage in video gaming. Already, video game purveyors such as Sony PlayStation and Oculus Rift have utilized VR technologies to sell more immersive gameplay experiences.[28]

The implications for work are much less clear. Facebook recently changed their name to Meta in an effort to more strongly associate their brand with their efforts at building the first comprehensive Metaverse—a place where people meet for work, play with friends during their free time, and everything in between.[29] However, even Facebook founder Zuckerberg—head of this campaign for a more digital future—is sober about the fact that this investment is not going to have returns for his company any time soon. While they projected that "billions" will exist within the Metaverse in the next decades, currently there is not widespread use of the Metaverse for daily activities. The Metaverse has been dubbed "the successor to the internet," a prediction which, if true, could have a wealth of implications for how we relate to work and play activities.

Dr. Vivian Hsueh Hua Chen is an Associate Professor at Erasmus University Rotterdam, Netherlands. Dr. Chen's research interests include the impacts and design of immersive technology such as video games, VR and AI. Dr. Chen investigates how virtual reality interactions influence prosocial behavior through her own research in Singapore (forthcoming), which observes how people interact in virtual worlds and how that influences their real-world social relationships. Her work interrogates whether VR enables empathy and prosocial tendencies.

In her forthcoming work, she tackles the assumption that when you are in VR, you are going to take the perspective of the person you are embodying. Is this true? This would have important implications for what we are able to achieve when we insert someone into a virtual reality world for either a play or work activity. If they embody a minority—in particular, a minority that they have a bias towards—can that bias be broken down? If we can passively embody others during virtual work and play, what does that mean for how we will engage with others in the real world?

Dr. Chen asserts that there are two types of perspective-taking: cognitive and emotional. Cognitive perspective-taking involves actively thinking about the dialogue you hear while in the VR experience (dialogue aimed at giving the user perspective about the experience of the person they are embodying), while emotional perspective-taking is feeling the experience presented to you. Does one approach create a different outcome compared to the other?

Dr. Chen found that VR only works to reduce bias in cases of cognitive perspective-taking; when people are able to think together with the character. To feel empathy is easier than to think empathetically: VR makes it easier to feel for others, but it does not challenge us to think for ourselves about others' perspectives.

Further, she found that it is more effective in first person view. About 85-86% of participants said they would intervene in the microaggression scenario presented in the VR world. This indicates that VR reduced the bystander effect. Interestingly, her research also found evidence of the black sheep effect, which is the tendency to evaluate a badly-behaving in-group member more negatively than an out-group member.

Further, Dr. Chen asked whether people really identify with the VR character. They found improvements in self-esteem among those who embody a personalized avatar, regardless of baseline self-esteem. They also found that the VR effect of a reduction in racist behavior is more effective with a personalized avatar. Further, she found that if people are embodying foreign workers (with an

[28]Cipresso P, Giglioli IAC, Raya MA, Riva G, "The Past, Present, and Future of Virtual and Augmented Reality Research: A Network and Cluster Analysis of the Literature," *Front Psychol*, 2018 Nov 6, 9:2086. doi: 10.3389/fpsyg.2018.02086. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6232426/#:~:text=VR%20is%20an%20immersive%2C%20multi,Cruz%2DNeira%2C%201993).

[29] "Why is Facebook changing its name, and what does meta mean?," *ABC News*, October 28th, 2021, https://www.abc.net.au/news/2021-10-29/why-facebook-changes-name-to-meta-meaning/100579882#:~:text=As%20Facebook%20goes%20'Meta'%2C,media%20apps%20Instagram%20and%20WhatsApp.

identity different than the player), their attitudes toward minorities improve and their feeling of psychological closeness to them improve. The scenes that she presents in her VR worlds to test subjects include Malaysian, Chinese and Indian characters, which is reflective of Singapore's diversity. She shows work activities in these scenes. For example, a team meeting in a boardroom and an immigrant completing their first day on the job at a drink stand.

Dr. Chen also noted that you actually don't need VR environments to be very immersive— the brain is easily tricked. However, Dr. Chen maintains that VR was no more effective at increasing empathy than less technologically advanced empathy interventions such as reading about others and imagining their experiences. Further, the theoretical underpinning of this work is that practicing a behavior makes it easier to behave that way later (in this case, practicing in VR makes it easier to act this way in real life). However, there exists the "Sleeper effect," which means that your behavior may not change immediately after an experience, but perhaps after a period of time a certain situation will bring that learning experience back and change your behavior in that moment. For this reason, it can be hard to track the effect of the VR bias training.

This brings up some interesting questions, in terms of how working and playing in virtual environments in the future will change how people behave. As Dr. Chen notes, it is not necessarily a stronger tool in terms of increasing empathy compared with other less technologically advanced interventions. However, the physical world is not as controllable as a virtual world, and VR may therefore be a more ubiquitous and far-reaching tool. The results of an "empathy intervention" may not be any stronger, but they may reach a much larger audience. If the creator of a virtual world wanted to include synthetic virtual experiences that were targeted at decreasing bias and increasing empathy, there is currently no laws to say that they cannot. There is no law to say that they couldn't make these experiences required as part of entry into the virtual world, or that they couldn't embed them in the virtual world as if they were organic.

Dr. Chen's work points out that the interactions that we have in the virtual world—while both working and playing—have an impact on how we think about other people in the physical world and how we interact with them. Private corporations are building and maintaining virtual worlds such as the Metaverse, with visions that they will become a popular space for many social activities including work and play. If we assume that our lives will indeed become ever more digitized, as they have so far, then it wouldn't be far off to think that once virtual worlds are at a working capacity, that we would begin to carry out our daily activities in those spaces more often. The temptation of convenience in playing and working with others in the virtual world will likely be difficult to resist. When present in a world that is synthetically built by a corporation, what information might we be latently consuming while we are engaging in an activity that may be controlled by an outside entity?

As Dr. Chen's work illustrates, this control that the inventing entity has over the underlying structure of a virtual world could be used for good. Dr. Chen's outline of virtual reality as an empathy-inducing tool could have significant consequences for what our world will look like when virtual reality becomes entrenched in daily activities. We could use virtual realities to imbue individuals with pro-social tendencies. But what are the ethics of these kinds of things? Do synthetic virtual experiences that are crafted to create these outcomes need to be disclosed to participants? Would it be desirable or ethical to subject all users to similar experiences or trainings in the VR world that would create these outcomes? Would corporations—who control these environments—be willing to do that? What other kinds of tendencies and thoughts would they perhaps to be more inclined to imbue users with?

Returning to our definitions of work and play in the context of the flow state, virtual reality has some interesting implications. Studies have found that players of virtual reality games (as compared to players of the 2D version of the same game) have a *stronger* sense of flow (loss of time and presence).[30]

Further, recall that an important aspect of achieving the flow state involves having the activity one is performing

[30] Hans Rutrecht, Marc Wittmann, Shiva Khoshnoud, and Federico Alvarez Igarzábal, "Time Speeds Up During Flow States: A Study in Virtual Reality with the Video Game Thumper," *Timing & Time Perception* 9, 4 (2021): 353-376, doi: https://doi.org/10.1163/22134468-bja10033

match the skill level of the player. Too easy, and the player (or worker) is bored, too difficult and the player becomes anxious or frustrated. Researchers found that adjusting the difficulty settings of a VR game to match the skills of the player led to higher levels of the flow state.[31] This means that VR could be a space in which many activities feel more immersive and enjoyable for users. Work could become more playful, and play could become more fun, depending on what capabilities of this structure we prioritize in developing, and for what use.

Further, if these digital structures in which we conduct our lives have rules and structures set by outside entities, it is likely that most public structures (both private companies and governments) would stand to gain from workers having a close association between work and play, and/or workers having difficulty differentiating between work and play activities. The use of virtual reality for use in *training* (in this case, bias training) further blurs this line. Where does education and training fall on the spectrum of work and play? This gamification of learning objectives such as increasing empathy could be perfectly illustrative of the kinds of uses that virtual reality would be put too. As VR blurs the line between what is physical and what is virtual, so too does it blur the lines between what is work and what is play. If you are playing a "game," but that game has an underlying structure meant to create something productive for society (in this case, decreased bias), then couldn't that be deemed work as well?

[31] Jeroen S. Lemmens, Constantin Freiherr von Münchhausen, "Let the beat flow: How game difficulty in virtual reality affects flow," *Acta Psychologica* Vol 232 (February 2023), https://www.sciencedirect.com/science/article/pii/S0001691822003274

Case Study 3: Internet Nations and DAOs

Another interesting digital technology that has arisen recently, also tied to blockchain technology, is a digital organizational structure known as a Decentralized Autonomous Organization (DAO). It is a collection of people that come together to collaborate on some kind of shared goal.[32] There is no top-down or hierarchical power structure to a DAO, which makes it unfamiliar to most of us, who are used to these structures in the companies we work for, the schools we go to, and even in the extracurricular activities we engage in for leisure and play (there is always a club president!). This lack of a leader or a pre-determined decision maker is known as decentralization, a central governing principle of the DAO and a point of pride for members.

DAOs are able to maintain decentralization and still be productive and make decisions through the use of two technologies: tokens and smart contracts. Stake in a DAO is determined by how many of that DAOs tokens you have. You can earn tokens by either completing tasks for the DAO or purchasing tokens with a cryptocurrency. Voting rights— the ability to make decisions on how the organization should be governed, what the organization should do, and how its resources will be used— are determined by token ownership. The more tokens you have—which equates to a bigger stake of "ownership" in the DAO—the more your vote means.[33]

Smart contracts are another essential technology to the functioning of a DAO. A smart contract is a computer program that encodes all rules and regulations that a DAO has collectively decided to include as part of it functions. Smart contracts automatically apply these regulations to how the DAO functions to ensure that these rules are followed. Smart contracts also cannot be changed once put into use, so they ensure fairness and transparency within the DAO.[34] There are also smart contracts that only execute when a certain condition has been met. For example, there could be smart contract that diverts a set amount of money to purchase a digital asset for the DAO if a certain percentage of the DAO's voting members vote yes to the proposal.

There is also a new, emerging technology that is being utilized in a DAO context. SourceCred is a technology used to reward people for contributing to projects. The technology is an algorithm that logs contributions to a project and assigns a reward, based on how much value the work brought to the overall project. This reward is in the form of "Cred" points, which cannot be transferred and are not tied to a monetary value. However, the higher your "Cred" score is, the more you will be rewarded with something called "Grain." Grain is a digital currency which can be exchanged for other cryptocurrencies (and therefore for fiat currency). The project seeks to make labor more visible, and to give value to those who are actually creating value—to make the process of rewarding labor just as nuanced as human contribution is.[35]

Professor Ellie Rennie, of the Royal Melbourne Institute of Technology, has conducted research evaluating this technology. Research following the SourceCred experiment has had a few insights. For one, it found that people got paid, including people who would not have otherwise been paid. Participants could build up their reputation through what they did, even while remaining anonymous. Social processes and work were rewarded in particular, and people would often self-promote to ensure compensation. As people came to SourceCred with backgrounds of what work is and how organizations function, there was an 'undoing' of these associations. This begs the question: Should the whole point of SourceCred be to make people think about their work and how that shapes their relationship to society? Professor

[32] Carlos Santana and Laura Albareda, "Blockchain and the emergence of Decentralized Autonomous Organizations (DAOs): An integrative model and research agenda," *Technological Forecasting and Social Change* 182 (September 2022), https://www.sciencedirect.com/science/article/pii/S0040162522003304

[33] Ibid.

[34] Carlos Santana and Laura Albareda, "Blockchain and the emergence of Decentralized Autonomous Organizations (DAOs): An integrative model and research agenda," *Technological Forecasting and Social Change* 182 (September 2022), https://www.sciencedirect.com/science/article/pii/S0040162522003304

[35] "Introduction," *Source Cred*, Last accessed April 2, 2023, https://sourcecred.io/docs/

Ellie Rennie asserts that this technology could completely change how we reward and value people's contributions in society: In a capitalist society, you are paid based on your replacement value, whereas with SourceCred you are paid based on the value that people see in your work.

DAOs have been put to use for many projects and ambitions, both for work and play. Some DAOs come together for a single purpose and dissolve after their goal has been met. For example, ConstitutionDAO was put together for the sole purpose of crowdfunding enough money to purchase a copy of the U.S. Constitution that was up for auction. The DAO raised over $40 million dollars but was ultimately not successful.[36] DAOs are also used for more long term and serious projects. For example, UkraineDAO was created to fundraise for those in need as a result of the war in Ukraine.[37]

Interestingly, some of the biggest DAOs in Asia are those that focus on gaming activities. GuildFi is a DAO based out of Bangkok with the self-proclaimed goal of bringing gamers together, as well as connecting "scholars" with guilds.[38] Yield Guild Games, mentioned in an earlier case study on cryptogaming, is governed using a DAO structure. Sky Mavis, the developer of Axie Infinity, is a DAO as well.[39] All of these DAOs are inextricably tied to blockchain technologies and use cryptocurrencies as a major mechanism in the way that they determine membership, as described above. In this way, these DAOs take gaming (and therefore play) and add an element of compensation and/or financial consequence to these play activities. This element of payment is strongly associated with work activities. Further, DAOs have the automated machine-enforcement of rules encoded in the smart contracts that govern them, which means that there is much more underlying structure to the activities a DAO carries out, which again has a strong association with work rather than play. Finally, DAOs are inherently goal-oriented organizations, and goal-oriented behavior is perhaps the strongest definition that we have of work.

In this way, it seems that DAOs can take playful activities, and perhaps even the playful desire to connect with others and make into a work-like activities. This makes it even more difficult to differentiate between work and play. By linking something playful to rules and compensation, we perhaps find it more difficult to maintain the playful nature of an activity.

What other impacts could the existence of DAOs have on the future of work and play? Chance McAllister, a core team member of a DAO and head of community for a project focused on building an internet country, provides some insight on how the future of governance may change through DAOs.

There has been some exploratory thinking around the idea that the DAO structure could one day become the bases of a "network state," or internet-based nation state. To understand this idea, one must first understand what the definition of a "nation state" actually is. A nation state can be thought of as a group of people that share a history and culture, and who are governed by the same collective entity (usually a government). The government is required to provide some kind of service to the members of the nation state—familiar services in this context include healthcare, infrastructure and education.[40]

Nation states first formed as a collective entity in order to serve a purpose for citizens. The concept of a physical nation state has been an outgrowth of the socio-historical context in which they were first generated and in which they exist in now. Therefore, couldn't there be a new, collective form of governance that utilizes the digital technology that is so central to our current social context?

Martin Gurri, a former CIA analyst, writes on politics and media. He asserts that our current institutions, including

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[36] Bernard Marr, "The Best Examples of DAOs Everyone Should Know About," *Forbes*, May 25, 2022, https://www.forbes.com/sites/bernardmarr/2022/05/25/the-best-examples-of-daos-everyone-should-know-about/?sh=20798fe940c3

[37] Ibid.

[38] https://discord.com/invite/guildfi Must join the GuildFi Discord chat and view the "FAQ" channel

[39] "The rise of crypto startups and DAOs in Southeast Asia," *Tech Collective*, August 12, 2022, https://techcollectivesea.com/2022/08/12/crypto-startups-dao/#:~:text=A%20DAO%20is%20a%20community,buying%20exclusive%20items%2C%20and%20connecting.

[40] Chance McAllister, "Internet countries (talk for future of work and play conference in Bangkok)," https://chancetaken.notion.site/Internet-countries-talk-for-future-of-work-play-conference-in-Bangkok-1763348a00f742e286f11f9b31addfd6

our governments, are not adapting well to modern technologies and context. They are not effectively responding to the seismic social shifts brought on by modern technologies including the internet. The citizenry they are called to govern have sensed this failure and have lost trust in their governments as a result. Gurri asserts the necessity of a fundamental shift in government operations in order for these institutions to survive in the modern age and regain trust.[41]

Decentralized Autonomous Organizations could be the mechanism by which this is achieved, as the technology could be leveraged to build a network state—an online country.

A network state is "a social network with a moral innovation, a sense of national consciousness, a recognized founder, a capacity for collective action, an in-person level of civility, an integrated cryptocurrency, a consensual government limited by a social smart contract, an archipelago of crowdfunded physical territories, a virtual capital, and an on-chain census that proves a large enough population, income, and real-estate footprint to attain a measure of diplomatic recognition." [42]

The general idea is that it is a group of people that come together under a DAO-structure (integrating cryptocurrency, utilizing smart contracts) to crowdsource enough funding to purchase enough land and real estate that they would become large enough to engender "a measure of diplomatic recognition." What diplomatic recognition would entail is difficult to define, as this definition of a "network state" can be hard to wrap one's mind around, and certainly the concept is purely theoretical at this point. Returning, however, to the definition of a nation state—it is simply a group of people with a shared identity that form a collective that provides benefits to them. Couldn't internet nations find some way to deliver digital infrastructure, some access to healthcare, or education— changing how we structure our governments and therefore how we relate to labor and leisure?

Chance McAllister supposes that conditions may be ripe for this experiment. In answer to the question of what conditions may bring about the impetus for the formation of a network state, there are three supposed conditions. For one, globalization allows for these online communities to connect. Secondly, technological change can bring about a necessity for new institutional structures, as new problems need new solutions. Finally, a loss of trust in institutions is posited to incentivize network states. All of these conditions are familiar to our current socio-political context. The experiment may be beginning now— you can actually view a dashboard of current DAOs attempting to achieve status as network states, which include DAOs aimed at building a network of co-working spaces, van-life communities, and car-free neighborhoods, as a few examples.[43]

[41] Ibid.

[42] Ibid.

[43] The Network State Dashboard, *The Network State*, Last updated April 2023, https://thenetworkstate.com/dashboard

Findings and Analysis

In this broad look at some of the digital technologies increasing in use, there a few key takeaways in terms of potential projections as to what the future of work and play in Asia will look like:

1. **It will become harder to differentiate between work and play activities.** Specifically, play activities will start to become commodified and associated with work. This phenomenon is rooted in our conception of work as generally tied to compensation and driven by goals and underlying structure. As play activities are increasingly tied to compensation and underlying digital structures, play activities will feel less playful. This was made clear in the analysis of cryptogames: The play-to-earn narrative in Web3 has now been exposed as poor design and unsustainable. The "risks of play" are clear in this case, for example a lack of reliable income and rights.

   As play activities are increasingly tied to work-like structures, play will become less productive in the sense that it will be less restful and meaningful. This is paradoxical, as making play into work in this way—in which we are attempting to accomplish a goal (for example, generate an Axie Monster through gameplay) it feels as if this should be deemed more productive. In fact, what is being generated in the case of play-to-earn cryptogames are digital "products" which could have been generated by the computer itself and therefore have no real value-add to the world. "Bullshit jobs" like these can be particularly straining for a worker's mental health.[44] Worryingly, these "bullshit jobs" may be pitched as play, which confuses the meaning and meaningfulness of both work and play. If one is being neither meaningfully productive nor restful in an activity, it is not providing the benefits of either work or play. To this end, there may be a growing awareness accorded to the importance of mental/emotional health and play, in response to this commodification of play.

   This project also included the psychological concept of the flow state as a potential way to measure the meaningfulness of an activity, in response to the relative difficulty there is in defining work and play. This leads to an interesting question: in the physical world, without the assistance of digital technologies, when we identify an activity as play, how often do we experience the flow state within that activity as compared to when we identify an activity as work?

   There have been several interesting findings in this regard. Csikszentmihalyi and his colleague found that the flow state is three times more likely to occur when a person is doing an activity identified as work. Even within these work activities, however, there is variation. For example, managers tend to experience flow more often while at work, while "general workers" report that recreational activities are more conducive to the flow state.[45]

   Some research has found that musicians who play their instrument occupationally were prone to increasing mindfulness as they played more often, which is key to accessing flow. However, at the same time occupational musicians found that the struggle of financial security in playing music occupationally inhibited achievement of the flow state.[46] The researchers in this study suppose that more attention should be paid to task frequency, and how that relates to perceived expertise (a key element to achieving the flow state), and how this task frequency element may be related to whether a task is occupational or recreational.[47] This is certainly an area for further research to be explored in the context of digital technologies. Further, the effect that commodifying play has on the usefulness and meaning of play is an area that will need more research attention going forward.

2. **Communities and institutions may become more decentralized.** Working and playing in digital worlds will mean that the structure of our organizations may change.

[44] Michelle (No last name), "The Threat 'Pointless' Jobs Pose to Workers' Mental Health," *Medium*, May 30th, 2019, https://medium.com/swlh/the-threat-pointless-jobs-pose-to-workers-mental-health-82eb5370e7ea

[45] Joshua Gold and Joseph Cioriari, "A Review on the Role of the Neuroscience of Flow States in the Modern World" *Behavioral Sciences* 10, no. 9 (Sep., 2022): 137, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7551835/

[46] Ibid.

[47] Ibid.

Current conceptions of how a company is run, and how governments function, could change radically as they are adapted to fit the digital communities, technologies and activities that are becoming increasingly popular. Based on the case studies in this report, it appears that the way in which our organizational structures are changing is towards more decentralization. Currently functioning DAOs showcase the workability of decentralization, while the ambitious vision of an "internet" country illustrates the potential for growth and innovation that these technologies have.

In this vein, Singaporean futurist Jared Poon has some thoughts about how the structure of work and play may change. He posits that work and play might become increasingly such that the structures, reward/punishment systems, win conditions and motivations are set internally (which is a hallmark of decentralization). For example, Poon asserts, how to play a game could become determined more by the players than the code, or what counts as a "good job" may be more determined by self rather than family or society.

Poon points out that play is already tending towards this projection that rules and structure will increasingly be set by those playing, rather than an outside entity. For example, there has been a surge in table-top RPGs (e.g. Dungeons and Dragons), and a surge in rules-lite, narrative table-top RPGs (e.g. Fate). There is also the phenomenon of the massively popular sandbox games (e.g. Minecraft, Roblox) as well as "modding" in games (e.g. Skyrim).

He continues to outline that work is also showing signs of increasing internal rule-setting (and therefore decentralization.) There is the rise of the gig economy, with its flexibility and the workers' setting of their own goals. There are also DAOs, and holocracies, which exemplify contractual rules devolved to smaller systems. COVID has also left us with much higher rates of employees working from home, with less attention on how they do their tasks. Finally, the antiwork and 躺平 (lying flat) movements reflect a rejection of societal-norms.

These points leave us with areas for further exploration. Is it desirable for work/play/life to be more internally governed than it is now? If so, what are some steps to move that way? As our institutions are becoming increasingly decentralized, what unhealthy kinds of internal government might arise? How do we prepare for/mitigate these challenges? These are points of further research that must be explored.

3. Digital structures that remain centralized may have more power and influence over users. There is another potential here in terms of who has control over underlying infrastructure. In the context of virtual reality, this field will require a massive amount of funding to get going—funding which seems to be so far concentrated in companies that follow traditional, centralized structures of power— specifically Meta.[48] If these virtual worlds are not going to be built with a decentralized organization behind it, what kind of virtual worlds will these companies be building for us to exist in? It seems that there are two parallel routes in terms of existing in a digital world—either you are working and playing in structures that are at least attempting to prioritize decentralization, or you are working in playing in structures built by a corporation with a centralized structure and a profit motive. As Dr. Chen's work illustrates, this control over a digital world can certainly be used for good, in terms of promotion of pro-social behaviors. But her illustration of the power of interactions in VR worlds can be perhaps expanded to allow us to think about what other kinds of structures and interactions might exist in VR. Especially if VR worlds are going to be governed by centralized structures, there may not be transparency in terms of what the underlying rules and objectives are with the way VR infrastructures work. Considering how convenient and immersive VR technologies may become, this could have massive implications for how we relate to work and play if we are spending a fair chuck of our time doing these activities in a virtual world that a corporation has built and now controls. What those implications will be remains to be seen, and should be a point of further exploration.

Conclusion

This report has provided three case studies that allow for a broad analysis of how digital technologies may influence the relationship between work and play—and how the relationships that individuals have to each of these activities may change over time. This report has pointed

[48] Jon Quast, "Here's How Much Meta Platforms Spent on the Metaverse in 2022," *The Motley Fool*, https://www.fool.com/investing/2023/02/08/how-much-meta-platforms-spent-on-metaverse-2022/#:~:text=If%20Meta%20Platforms%20is%20correct,to%20be%20worthwhile%20in%20time.

out several areas of needed further research, including into what the dangers are of both centralized and decentralized underlying structures to digital spaces, as well as how digital games and digital work affect our assessment of how meaningful those activities are. There is much more to learn about the future of work and play in Asia.

Appendix

Appendix A: ***Biographies of participants that were consulted for this report***

Aashiyana Adhikari is a research associate at the Center for South Asian Studies. Her research areas include digital trade and connectivity in South Asia, as well as the application of artificial intelligence and digital technology to reduce socioeconomic inequities in South and Southeast Asian countries. She is the founder and curator of Women Policy Nepal, a digital platform aimed at informing and educating women about their constitutionally guaranteed rights and leveraging digital technologies to transform Nepal's education system.

She is a Gender and Development Studies graduate from AIT in Thailand. Her graduate thesis focused on young women in Nepal's experiences with digital dating violence.

Casper Sermsuksan is the founder of "really Corp." an innovation, business scaling and leadership training consultancy. He is also the Strategy and Global Ecosystem Executive Vice President for the Thai Startup association. He has over 10 years of experience building, running and managing companies across the world, including San Francisco, USA; London, UK; Jakarta, Indonesia; Bangkok, Thailand; and Singapore.

He has previously worked at Amazon, Sony Pictures, Deloitte and Belkin. He graduated from the University of Southern California's Marshall School of Business. He was selected as Blackbox Google Scholar, Alibaba & UN e-Founder Fellow and Prestige Indonesia 40 Under 40.

Chance McAllister Chance is a nomad passionate about education and finding ways for people to thrive in the 21st century. He is the head of community at SafetyWing's moonshot project, Plumia. He is the founder of Chingu, an EdTech collaboration platform for software developers. He has also spent time as a core team member and community lead at CityDAO. He is interested in the burgeoning Network State ecosystem.

Cheryl Chung is Head of Singapore for Kantar Public. A seasoned public sector futurist, Cheryl works at the intersection of strategic foresight and public policy, bringing two decades of expertise to the role. She spent the majority of her career in the Singapore Government, working across policy, strategy, and futurist roles in various economic and infrastructure agencies, including the Ministry of Trade and Industry, the Centre for Strategic Futures (under the Prime Minister's Office), and the Ministry of Transport.

Dr. Elisabeth Sylvan is the Managing Director of the Berkman Klein Center for Internet and Society at Harvard University. Dr. Sylvan's lifelong interest is in sociotechnical systems that support creativity, shared knowledge, and collaboration.

At the Berkman Klein Center, she has launched new educational initiatives such as the Summer Institute and BKC Research Sprints, which include Digital Identity in Times of Crisis, Digital Ethics in Times of Crisis: COVID-19 & Access to Education Learning Spaces, Digital Self Determination, and the AI Policy Research Clinic. She leads multiple initiatives within the Policy Practice on AI on topics related to education, youth, and technology. Dr. Sylvan also co-organizes the Tech through Spec working group.

Professor Ellie Rennie is an ARC Future Fellow and Principal Research Fellow in RMIT's Digital Ethnography Research Centre. She is also a member of RMIT's Blockchain Innovation Hub and an Associate Investigator of the ARC Centre of Excellence for Automated Decision-Making and Society.

Her current research is focused on social and policy questions arising from automation technologies, including blockchain. She has worked extensively on the topic of digital inclusion, particularly in relation to remote Australia and Indigenous communities. She is an ARC Future Fellow, working on 'Cooperation through code: The social outcomes of blockchain technology.' The project aims to show the social

consequences of using distributed ledger technology, including blockchains, for compliance, registries and regulatory processes and is generating new knowledge of how technology is changing administrative coordination between government and non-government entities.

Jack Linchuan Qiu is the Shaw Foundation Professor in Media Technology at Nanyang Technology University (NTU) in Singapore. He has published numerous books in both English and Chinese including Goodbye iSlave: A Manifesto for Digital Abolition (U of Illinois Press, 2016), World Factory in the Information Age (Guangxi Normal U Press, 2013), and Working-Class Network Society (MIT Press, 2009).

Jared Poon runs Counter-Fictional, which aims to help individuals, teams, and organisations tell healthier stories about ourselves and one another. He is a Producer with LambdaMu Games, and a Fellow at the Lee Kuan Yew School for Public Policy and the Chandler Institute for Governance.

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