



# State of the Industry 2019:

## Mental Health in the Game Industry

A Whitepaper by



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# Executive Summary

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This paper discusses specific industry trends that have negatively impacted the mental health of its employees and leaders.

- ◆ Job stress, instability, and longevity are significant problems facing the game industry.
  - Game development has become a career path that frequently demands long hours and lacks job stability and clear career trajectories.
  - Only one-third of developers remain in the industry for 10 years or more.
  - 53% of game developers report that “crunch” (working more than 40 hours per week over an extended period of time) is an expected component of their employment, with less than 18% reporting overtime compensation for exceeding 40 hours a week of work.
  - Crunch, which is related to burnout, is identified by emotional exhaustion, reduced personal accomplishment, and feelings of hopelessness.
  - The average number of employers for game developers in a five year period is 2.2.
  - Job instability is related to increased stress, work anxiety, and depression.
  - To reduce burnout in the industry, management should minimize determinants, maximize protective factories, and begin to change industry cultural norms around work environment and work hours.
- ◆ While video games are a form of mainstream media, the industry lacks diversity and a sense of inclusion.
  - In 2019, only 19% of respondents from a survey of game developers identified as female in the United States.

- In the same survey, only 32% of respondents did not identify as Caucasian or European.
  - A lack of representation has likely contributed to hostile and challenging work experiences for game developers.
  - A lack of diversity, inclusion, and representation may also be contributing to a cyclical model of exclusion in video game content and culture. Greater diversity in the workforce would provide opportunities to challenge norms in the work environment and in game content (Shaw, 2014).
  - To increase diversity, companies should adopt new hiring practices and listen to the feedback from marginalized groups in the industry to support retention.
- ◆ The public perception of games remains a potential secondary stressor for game developers.
- There are growing concerns over mental health stressors related to how individuals and companies navigate online harassment and provide support and/or validation to their employees and fans (Van Zoonen et. al., 2016; Farokhmanesh, 2018).
  - The research underpinning the beliefs that violent video game content has detrimental effects on its players is problematic at best, filled with questionable research practices, media sensationalization, and false equivalence (Coulson & Ferguson, 2016; Ferguson, 2007; Przybylski & Weinstein, 2019).
  - Mental health professionals have voiced concern over problematic gaming among extreme players. While the WHO added Gaming Disorder and Hazardous Gaming to the new edition of the ICD in 2019 (Park, 2019), the current state of research does not fully support gaming addiction as an independent clinical disorder (Aarseth, et al., 2017).
- ◆ Take This is leading the charge to normalize the conversation about mental health inside the gaming industry.
- ◆ Understanding mental health challenges as normal and providing support for them are essential to creating a work culture that embraces

diversity, fully supports people who make games, and recognizes that mentally well people are better, more productive members of a workforce.

- ◆ Good models for addressing these norms and practices do exist throughout the industry. Many fantastic game companies are focused on various aspects of mental health and employee wellness. We hope to learn from the following examples (among others) over the coming year:

- Big Huge Games' low-crunch, high-diversity work environment
- Ubisoft's no-layoff model
- Certain Affinity's no-layoff model
- Wooga's top-down focus on mental health
- Bungie's focus on diversity
- Microsoft's focus on work-life balance, player safety, and inclusion

# Introduction

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Take This is a non-profit dedicated to decreasing stigma and increasing support for mental health in the game enthusiast community and inside the game industry. As a mental health organization in the games space, Take This is in the unique position of being able to both celebrate games and the people who make them while also critically evaluating how industry practices and norms can make it difficult for people who make games to be mentally healthy.

Mental health challenges affect many people. One-in-five people in the U.S. receive a mental illness diagnosis in a given year and as many as one-in-two people receive a diagnosis in their lifetime (National Institute of Mental Health, n.d.). The cost of mental illness is gargantuan. Current healthcare spending on mental health exceeded 213 billion in 2018 and is projected to continue growing (Statista, 2019). Take This has taken the last few months to understand current workplace trends in the industry and how they impact the mental health of game developers.

These trends include job instability and workplace stress, such as a dependence on “crunch” practices and harassment. The former has been making headlines since late last year, when an article from *gamesindustry.biz* outlined the 2017-18 layoffs industry-wide - a list that has only grown since. The latter has been in the news more recently, but began entering the public discourse in 2018 when Kotaku’s Cecilia D’Anastasio broke a story revealing that Riot Games, one of the largest game makers in the industry, centers its company’s core practices around the concept of a “core gamer,” which is a traditionally exclusionary term used to identify white male gamers ages 18-34. Online harassment is a pervasive and constant source of stress for those in the game industry and game communities, so widespread as to be difficult to quantify. These are only a few of the distinct challenges facing the industry and have serious implications for the mental wellbeing of game industry workers (Chironis, 2019).


Through a close review of recent press on the industry, scientific literature on workplace mental wellness, and a series of interviews with game industry professionals, Take This has identified three areas of broad concern:

- ◆ Lack of job stability and longevity
- ◆ Lack of diversity and inclusion
- ◆ The public perception of games

In this white paper, we will discuss these three specific industry trends and how they negatively impact the mental health of employees, from interns to leadership. As an initial exploration of these issues, this paper is intended to 1) be the beginning of a conversation that the industry needs to have in order to do its best work, and 2) recognize the great passion and creativity that fuels developers to make great games.

This paper, is the start of an ongoing initiative to partner with industry leaders, game studios, and publishers to cultivate positive work environments and support the physical, social, and psychological wellness of employees. This initiative aims to:

1. Create a strong business case for addressing mental health in the workplace.
2. Better understand the mental health risk factors involved in making games.
3. Conduct original, high-quality research on specific mental health challenges within the game industry.



I think that everyone invests a lot in their work, but I think that game developers do so much. I think that game developers see being a game developer as their identity and they are very attached to their projects, which can make issues at their job - poor development, poor reception of their work - really hit hard. I think that people in the game industry so often suffer from impostor syndrome. I just think that such a group of passionate people that are working on really complex art when it comes down to it, there's a lot of chance to be hit by some hard blows, and I think that's a huge struggle (Take This, 2018).



# Stress in the Workplace

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Stress is the body's natural response when demands exceed one's ability to manage them. Our physiological and psychological responses to stress, such as producing adrenaline, becoming hyper-aware, and feeling tense or anxious, are survival mechanisms designed to help keep us alive. In the short term, stress is mostly harmless and can even be beneficial. Maintaining the balance between demands and one's ability to meet them is called allostasis.

Allostasis, similarly to “homeostasis,” refers to the psychophysiological (physical and psychological) processes in place allowing individuals to remain stable through change. That is, how well individuals adapt to their environment. While homeostasis refers to the regulation of our internal biological processes and states (e.g. temperature), allostasis refers to the regulation and adaptation of an individual's psychophysiology within the context of their ever-changing environment (Goldstein & McEwen, 2002).

While allostasis represents regulation and adaptation, allostatic load represents the cumulative psychophysiological burden in response to external stressors, which can ultimately lead to dysregulation and dysfunction. Allostatic load is effectively physical and psychological wear and tear. This wear and tear happens as a consequence of ongoing exposure to stress-inducing stimuli, along with individual psychophysiological and behavioral responses to that stress.

Initially, our psychophysiological systems adapt to accommodate short-term stressors. Stress that is chronic or maintained over a long period of time, however, has a deleterious effect on lifelong psychological and physical health. As explained by McEwen (2006):

*“It is not just the dramatic stressful events that exact their toll, but rather the many events of daily life that elevate and sustain activities of physiological systems and cause sleep deprivation, overeating, and other health-damaging behaviors, producing the feeling of being ‘stressed out’” (p. 367).*

# Consequences

Some of the key systems involved in allostatic load are elevated sympathetic nervous system activity (commonly known as fight-flight response), which increases cortisol and norepinephrine, elevating your heart and breathing rates to enable fast action in the face of threat (see Figure 1). Additionally, increased allostatic load dampens the parasympathetic nervous system response (this is the calming response after the fight-flight response), which normally slows heart rate and restores critical biological processes such as sleep and digestion (Goldstein & McEwen, 2002).

Over time, increases in sympathetic activity alongside decreases in parasympathetic activity dysregulated from an adaptive baseline to a heightened pattern of physiological reactivity (see Figure 2). This can then permanently impact multiple systems such as cortisol & insulin regulation, cardiovascular health, cognitive functioning, and mental health and wellbeing (Goldstein & McEwen, 2002).

## THE EFFECTS OF CHRONIC STRESS

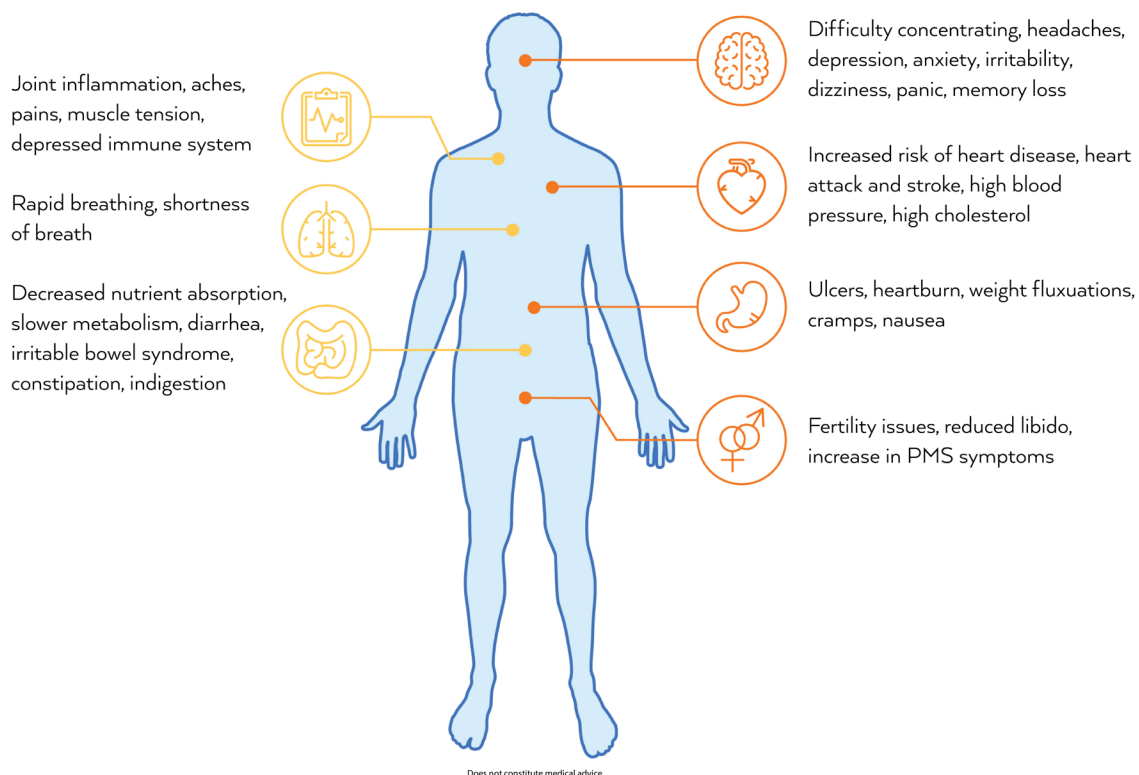


Figure 1. The effects of chronic stress according to McEwen, 2006.

In other words, chronic stress can have significant, life-long negative impacts on a person's well-being including an increased risk for heart disease, a depressed immune system, exacerbation of existing mental health symptoms, and development of new or additional mental illnesses (i.e. depression, anxiety, etc.; Marioti, 2015).

Not only is chronic stress in the workplace bad for employees, it's ultimately bad for a business' bottom line. Prolonged exposure to stress can cause mental health symptoms such as depression and anxiety to develop or worsen existing mental health challenges. Depression is the #1 cause of disability worldwide (WHO, 2018). Collectively, employees miss 68 million work days each year due to depression alone which equates to \$23 billion in lost productivity (Witters, Liu, & Agrawal, 2013). The vast majority of mental health challenges can be effectively addressed through appropriate mental health intervention and more than 80% of employees who receive mental health treatment report improvement in job satisfaction and work efficacy (Center for Workplace Mental Health, 2019). Furthermore, business costs incurred due to absenteeism and presenteeism (being physically but not mentally present) are four times greater than the average cost of mental health treatment (Shaw Mind Foundation, n.d.). Treatment is also far more cost-effective compared to replacing a current employee which can cost from 50%-60% of an employee's annual salary in direct costs to 90%-200% of that same salary in indirect costs (Allen, n.d.).

## Special Stressors in the Games Industry

The game industry is neither unique nor wholly the same as other creative, hit-driven industries. As a relatively new form of entertainment, in some ways it is still finding its footing. That said, games are a rapidly expanding, multi-billion-dollar industry firmly established as a cultural force. With these contradictions in mind, this section examines four particularly troubling attributes common (though not universal) in the industry: crunch, job instability, job loss, and job-related uncertainty. As noted by Harvey et al (2017), these stressors appear to contribute to negative mental health outcomes:

*“Based on a systematic search, 12 work-related risk factors were identified with reasonable levels of evidence for an association with increased rates of common mental health problems; high job demand, low job control, low workplace social support, ERI [effort–reward imbalance], low organizational procedural*

*justice, low organizational relational justice, organizational change, job insecurity, temporary employment status, atypical working hours, bullying and role stress.” (7)*

For each stressor, we examine existing research and identify suggested modifications to game development workplace norms. Additional stressors that relate to public perception and interaction (including online harassment) are covered separately in the section entitled “Public Perception of Games and Game Makers.”

## Crunch in the Games Industry

The term “crunch” has long been used within and about the games industry. Industry articles with hot headlines such as “The human toll of ‘crunch time’” (Arguello, 2018), “More And More Game Makers Are Talking About Crunch” (Schreier, 2018), and “What will be left of the people who make our games?” (Cross, 2018) are published each week, creating more visibility in which to examine and challenge the ingrained culture of crunch that seems to be widespread throughout the games industry. Some assert that the shifting landscape of games that require more frequent updates has only intensified this problematic practice (Macgregor, 2019). Take This published its first white paper on the topic of crunch in 2016 (Take This, 2016), noting that long periods of overwork have negative impacts on both individual health and workplace productivity.

### What is Crunch?

Crunch refers to the practice of working long hours, beyond the traditional 40-hour working week, consistently for extended periods of time (Take This, 2016). As outlined in our previous report (see Take This, 2016), crunch can be either mandatory or insinuated through cultural norms in order to meet specified deadlines.

It is important to distinguish between these types of crunch, because long-term cultural crunch is actually a symptom of a toxic organizational culture.

**Long-term cultural crunch is a symptom of a toxic organizational culture.**

This implied expectation relies on power imbalances and disregard for employee health to create a false equivalence between “passion” and work hours. Therefore, this is the

type of crunch with which we are concerned.

Crunch “is a result of feature creep, design iteration, poor planning or, most commonly, an all-or-nothing approach to design, which is often mandated from the top down” (Dring, 2018). Poor project organization by leadership at the start can lead to a final push for crunch at the end to meet the demand and competition (Schreier, 2019). Examples of crunch within the industry include “100-hour working weeks” (Arguello, 2018), working for “nearly four months without taking a day off,” and pulling a 36 hour shift over a weekend while also working 80-hour weeks (Grayson, 2018). One developer described how he and other employees were so sick of crunch that they walked out at their scheduled end-time for a typical work week rather than staying late. The next day, all the employees were informed that if they chose to continue only working required hours, they would “naturally select themselves” - meaning they would be fired (Arguello, 2018).

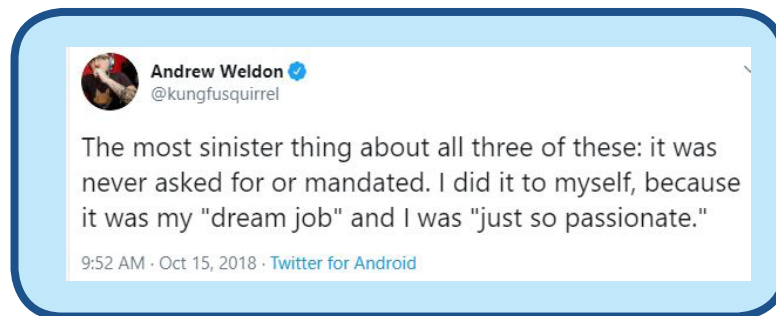
While these kinds of workplace practices would be viewed as exploitative, unhealthy, and violations of labor standards in other industries (Fair Labor Association, 2012), some in the game industry view crunch as a right of passage, a kind of hazing that demonstrates you are tough enough, dedicated enough, and passionate enough to be in game development (Wright, 2018). For example, a guest post on VentureBeat argued that making great games requires “giving [games] everything you’ve got and more” and that developers who complain about crunch should just find another occupation; “Don’t be in the game industry if you can’t love all 80 hours/week of it — you’re taking a job from somebody who would really value it” (St. John, 2016). Tanya Short (2016), leader of Kitfox Games, described several ways she and others justify their experience of crunch - from feeling validated by the success of a completed project to camaraderie. Walt Williams (2017), one of the contributors of Bioshock and Borderlands, described in a Polygon article how crunch is his method of work despite the fallout associated:

*I love it, except for when I hate it, but I can’t hate it if I never stop. Even when I’m not crunching, I work too much. I’ve edited scripts in ICU rooms, responded to emails while begging lovers not to walk out the door, sent brainstorming lists during the birth of my child. I held my grandfather’s hand while he passed away, then went into his office and wrote text for mission descriptions. None of this was expected of me, and no one would have dared to ask. I did all these things for me. Work brings order to my world. When*



*things get tough, I slide down into my job and disappear. I let my health, relationships, and responsibilities fall to the wayside. When I finally come up for air, there's a smoking crater where my life used to be. Instead of picking up the pieces to start again, I slip back down into the thick of it. This is how I cope.*

This mentality played out in 2018 when a behind-the-scenes look at the development of Red Dead Redemption 2 (Rockstar Games, 2018) featured Rockstar founder Dan Houser casually speaking about his team's 100-hour work weeks during the final push of the game (Goldberg, 2018). The problem with framing unhealthy working habits as an expression of dedication is that it not only normalizes unhealthy workplace habits but glorifies them and perpetuates harmful and pernicious stereotypes around who does and does not belong in the industry (see the Inclusion section below for additional information). As this tweet from a senior designer at Bungie notes, this can be insidious:



## Why is crunch a problem?

While systematic research on crunch is limited, well-established workplace research provides extensive evidence that crunch-like workplace practices negatively impact both employees and employers in a variety of ways (Mauss, et al., 2015). For example, the conditions that crunch creates can negatively impact sleep, diet, mental health, and overall work/life balance and quality of life (Take This, 2016). Research investigating crunch practices and work-related stress across a variety of workplace settings also indicates that the primary outcome of crunch practices is burnout (Hobfoll & Shirom, 2001) and burnout-related experiences including emotional exhaustion, depersonalization, reduced personal accomplishment, decreased enthusiasm about work, hopelessness, and feelings of entrapment in the place of employment.

Businesses also risk failure when they encourage a culture of crunch. In a study on game outcomes and employee experience, Tozour (2015) discovered multiple problems when crunch was involved. Thirty-two percent of projects completed with crunch were reported as ‘very unsuccessful’. When crunch was absent from a project, the game was found to be twice as likely to be successful upon its release. When developers identified ongoing crunch culture in the workplace, their projects were reported over 10 times more likely to be unsuccessful (Tozour, 2015). For example - in the case of the game Anthem by BioWare, the final product at launch was poorly received (Schreier, 2019).

In addition to these concerning physical and psychological impacts, more recent research (Mauss, et al., 2015) examines the psychophysiology of chronic stress and burnout in the workplace, outlining the concepts of allostasis and allostatic load. These concepts shed light not only on the immediate negative effects of burnout and chronic stress, but the long-term impact on psychological and physical health.

## **Crunch, Allostatic Load, and Burnout**

The concepts of allostasis and allostatic load are important to understand when talking about crunch and burnout in the context of the game industry. The term burnout refers to a chronic, psychological condition that results from prolonged exposure to job stressors which exceeds simple exhaustion from stress exposure, and can be characterized by three dimensions: exhaustion, cynicism (e.g. being callous, negative, or detached to the needs or the job or other people), and a sense of inefficiency or ineffectiveness in one’s job (Maslach, 2003). Burnout is positively correlated with decreased job performance, increased absenteeism, and increased job turnover rates (Swider & Zimmerman, 2010). It is also associated with increases of depressive symptoms, greater numbers of mental health diagnoses, and decreased rate of recovery (Upadyaya, Vartiainen, & Salmela-Aro, 2016).

Maslach (2003) argued that examining burnout from multiple dimensions effectively refutes the common wisdom that burnout results from people simply working too hard, and instead it allows burnout to be examined in the context of a variety of factors, including environmental demands and interpersonal interactions, as well as traditional stress load. To reiterate,

there is more to burnout than just working too hard. The environmental stressors of crunch and burnout have been shown to be an important predictor of chronic stress in workplace studies (Lee & Ok, 2012). Furthermore, additional factors such as employment instability, fluctuating levels of job satisfaction, and emotional labor burden, may further contribute to a workplace culture that presents a high risk for burnout (Lee & Ok, 2012), and consequently, high allostatic load.

**There is more to burnout than just working too hard.**

Research on the topic of burnout has also examined the concept of work engagement, considered a positive work experience consisting of the ostensibly opposite concepts as burnout: energy, involvement, and efficacy (Maslach & Leiter, 1997). However, there is evidence to support the notion that work engagement and burnout do not exist at the opposite ends of the same spectrum, but may be separate but related concepts (Maricuțoiu, Sulea, & Iancu, 2017; Trépanier, Fernet, Austin, & Ménard, 2015). In other words, just because an employee does not suffer from burnout, does not necessarily mean they will be highly engaged. Survey results from other industries support the idea that those who experience work engagement are inclined to remain in their career longer (e.g. Leyenaar & Frintner, 2018; Kedmey, 2016).

## **Applications in the Game Industry**

What does all of this mean for the game industry? We need to examine the systemic and organizational factors that can contribute to burnout. Yes, crunch practices clearly contribute to exhaustion; but beyond overwork, other factors such as frequent studio shifts and lack of compensation for excessive work hours could reasonably be hypothesized as contributing to the decreased interest/investment in one's work and coworkers (i.e. cynicism). A lack of career path or advancement (see "Job Stress, Instability, and Longevity" below) might also be understood to contribute to perceptions of one's own ineffectiveness in one's job, as could project abandonment/cancellations. This echoes mental health concerns related to inclusion and diversity, especially a lack of a perceived career pathway and long-term stressors, as we cover below.



Based on their research and others', Bakker and Costa (2014) offer several recommendations to prevent burnout. While some of these interventions may be resource and time intensive, the added costs should be weighed against the monetary costs and productivity losses in hiring new employees due to job turnover (e.g. recruitment costs, ongoing personnel support of new employees, initial orientations and trainings). They include:

- ◆ Management interest in individual needs: managers and administrators can work with employees to identify the employees' needs in coping with the high demands of the game industry, and develop policies to meet the needs of employees, especially those exhibiting signs of stress, disengagement or burnout.
- ◆ Reduction of job hindrances: managers and supervisors should work with employees to reduce perceived obstacles to work engagement, such as any ambiguity or conflicts in employee job roles or duties, as well as managers offering frequent, supportive, constructive feedback. Other strategies may include collaboratively setting goals with employees and specific plans for overcoming obstacles.
- ◆ Increase recovery time: Employees need time both physically and mentally to psychologically detach from work. This time may include exercise, social activities, or other low-effort activities. One potential threat to this is the perceived need to be constantly connected to work via email and mobile devices.

While the most recent International Game Developer Association's (Weststar, O'Meara, & Lagault, 2018) Developer Satisfaction Survey (DSS) indicated that the number of developers working under crunch conditions was on a downward trend, 76% of game developers still report working more than 40 hours per week over extended periods of time (Weststar, O'Meara, & Lagault, 2018). In contrast 44% of the 2019 Game Developers Conference (GDC) survey respondents reported working over 40 hours per week on a game, indicating that response biases to these two surveys may be catching divergent cultural norms across different parts of the industry (Game Developers Conference, 2019). Although both numbers are cause for concern, further investigation into crunch frequency and crunch practices across the industry is warranted. We also see the opportunity for further research on maximizing work engagement and minimizing burnout.

Based on these suggested interventions, we highlight the recommendations identified in Take This' 2016 white paper, *Crunch Hurts* - interventions that are potential ways to address burnout:

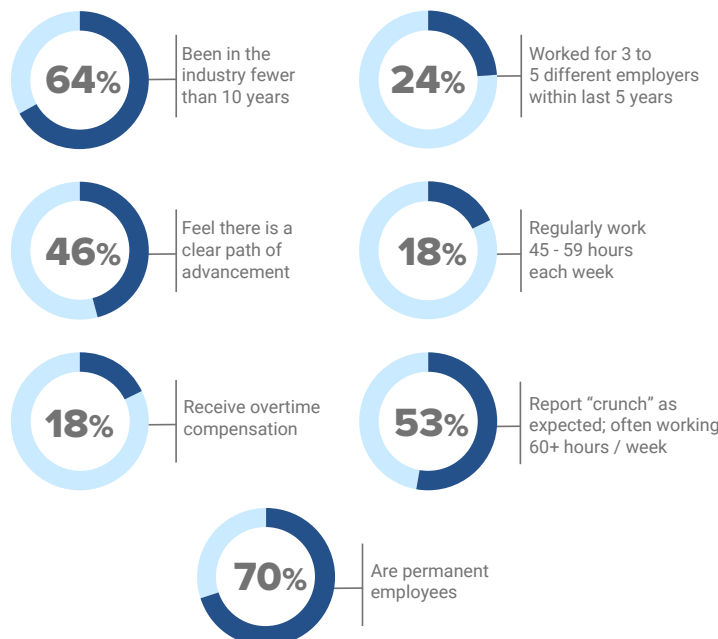
- ◆ Minimize determinants: identify crunch practices in your studio (i.e., management culture, scheduling mistakes, etc.).
- ◆ Maximize protective factors: mental health education and self-care opportunities, and implement workplace regulations (i.e., maximum work hours, days off).
- ◆ Change industry cultural norms: reiterate that passion and crunch are not analogous terms and that developers can value their work without neglecting a healthy work/life balance.

## Job Stress, Instability, and Longevity

The 2017 Developer Satisfaction Survey (Weststar, O'Meara, & Lagault, 2018), highlighted several alarming statistics about the working conditions for game developers including the intensity of work schedules, compensation, potential for career advancement, and employment longevity. Below are a few of the concerning findings from the survey:

### Findings from the 2017 IGDA Developer Satisfaction Survey:


#### Working Conditions for Game Developers



These findings reflect a career path that frequently demands and normalizes extended working hours, lacks job stability, and is often unpredictable and without clear trajectories for growth or advancement. These factors may explain why only one-third of developers remain in the industry for 10 years or more. Workplace wellness indicators like those described above overlap significantly with a wide variety of psychological concepts and mental health outcomes.

## Job Changes

As we noted in our introduction, job instability, company closures, and contract work are contributing to a much more mobile and less predictable employment experience for many people who make games. For certain small- and mid-size companies, for example, this challenge exists because of a lack of intellectual property, or focus on a single game:



Those guys were working 7 days a week, crazy hours, for 3 months. And we had 1 architect who's central to the whole thing, he's been really busting his ass all year long. Now we're getting them some time back, some time off, some comp time to reset themselves, but it was rough. We didn't have a choice. There was no, "we'll just ship it next quarter." No, no, no. There's no money. If we don't come out, this game never comes out and the last 2 years you've been working on it, you having nothing on your resume, you have nothing to show for it (Take This, 2018).

Through the turbulence of projects as illustrated by the anonymous source above, having evidence of hard work is crucial to continuing employment. It is also difficult to imagine avoiding attachment to projects like the game they discussed above - especially if your job and very income rely on completing it. Laurence (2015) explored how job displacement impacts employees, considering how employees lost their job as a significant factor to how employee mental health is impacted. Individuals have been found to struggle more when they felt attached to the workplace and the projects they were completing when displaced from their jobs (Laurence, 2015). Both the completion of projects and attachment to the workplace rely on trust

above nearly all other factors. Beyond the workplace itself, Laurence (2015) discovered that employees who were abruptly displaced from their jobs felt increased threat to their own sense of security - decreasing their belief in the “benevolence and fairness of life, in turn, eroding [their] trust in wider society” (p.55).

Employees were shown to lose trust most often if they lost their job due to layoffs, downsizing, company closures, restructuring, or reduction in employee redundancies (Laurence, 2015). In 2018 alone, there were many game companies who completed mass layoffs, and more have followed already in 2019 (Lanier, 2018). Studies show that it is vital for employers to warn employees as soon as possible to reduce the negative mental health impact of job loss, or if there are plans to restructure, relocate, reduce the number of employees, or close (Laurence, 2015; Martin, 1999). It would be ideal to have a minimum of two months’ warning of actual plans for the changes (Martin, 1999). Without said warning, research has shown that former employees experience an average of more than six months of prolonged and significant job-related stress (Martin, 1999), although anecdotal evidence from a developer who made this choice indicates that, “it’s a double-edged sword” because handling uncertainty is also a stressor (Take This, 2016). A potential alternate approach is to warn about layoffs only when they are confirmed, but as soon as possible.

## **Job Instability and Mental Health**

Job instability, as we use the term here, encompasses a range of situations, including uncertainty related to employment status or roles and responsibilities while being employed, layoffs or company closures, or frequent job changes either as a contractor or full-time employee. The 2018 IGDA DSS (Weststar, O’Meara, & Lagault, 2018) paints a picture of relatively frequent shifts for game developers. When asked how many employers they have had in the past 5 years, the average answer was 2.2. Surprisingly, freelancers and contractors had a similar average number of employers: 3.6. This indicates that employees are often hired and let go, while freelancers seem to maintain stable relationships with a core set of clients. A corollary to job instability is self-funded games, which can come with significant instability and financial stress. In the GDC’s 2019 State of the Industry survey, respondents reported that 34% of game projects have been self-funded.

There are greater repercussions to job instability and loss than simply losing employment. For example, when employees lose their jobs, individuals are often required to move to new locations to accept work. This reduces short-term income and it can take up to six years to eliminate the setbacks workers encounter due to relocation (Fackler & Rippe, 2017). Even when the unemployed remain in their location, individuals can suffer “substantial long-lasting losses - both in terms of employment and wages” (Fackler & Rippe, 2017, p. 459). Monetary losses aside, the negative impacts also include an overall decrease in reported life satisfaction and increase in mortality rate (Fackler & Rippe, 2017). Martin (1995) found that as individuals relocate more to find work, the more likely they are to experience increased stress, anxiety related to work, and depression symptoms. Frequent job changing has also been associated health risk behaviors, such as smoking cigarettes, drinking alcohol, and physical inactivity (Heslop et al, 2002). Children increase the detrimental effects of relocation, and individuals with families are at an even higher risk of suffering due to job shifts in general (Martin, 1995).


Changes in levels of job strain, control, psychological demands, and social support also impact one’s risk of anxiety and depression (Mark & Smith, 2011), as well as burnout (Day, Crown, & Ivany, 2017). These effects were found to be similar for males and females and across different socioeconomic groups. In other words, no matter who you are, the more uncertain a work environment, the greater the risk of depressive symptoms, and changes in the expectations held by the workplace. The takeaway message is that intense organizational changes that result in increased psychological demands placed on workers can have an extremely negative effect on their mental health. De Witte et al (2015) offer a number of practical approaches to mitigating the negative effects of job instability, including communication, participation, and support in ensuring long-term employability.

## **Applications in the Game Industry**

Recent research has identified some potential ways to mitigate to the negative consequences noted above. Day and colleagues (2017) found that workers who experienced high levels of autonomy tended to feel less burnout. This could be particularly important during times of intense organizational change as it would help the worker to moderate the chaos in their own mind.


The same study also found that supervisors play an extremely important role in worker well-being, particularly during times of change. Workers with supportive supervisors reported less negative health issues, which is an important finding as it pertains to how a company may help maintain the wellness of employees during times of intense change. Researchers also indicated that leadership training for supervisors may help ameliorate negative issues during organizational change, as leaders may often lack change management skills, especially soon after receiving a promotion or attaining a management position (Day et al., 2017).

This research reinforces a theme we have heard repeatedly in our conversations - that management and supervisor training and support is essential to helping the industry tackle these problems. As an HR leader with AAA experience noted,



Those people on a day-to-day basis who model those behaviors are those middle managers. They set the tone on a day-to-day basis of what's going on in their team... Not only do they have to tell their people that it's OK, they have to model it... they can't just say it, they have to lead by example (Take This, 2018).

Managers themselves also experience stress and other challenges in highly unstable environments. The executive of a mid-size indie studio we spoke with noted,




For management, you know, I have a lot of sleepless nights because I worry about my people. My stress doesn't come about me, my stress - everybody has families, and kids, and mortgages. We want this to be a safe, secure, fulfilling, creative place where they can do awesome work. Our job as management is to keep as much of the financial sausage-making off of their plate and let them do their best work (Take This, 2018).

This indicates an important area of further research and highlights an area where managers require additional support.



Van der Velde and Feij (1995) found a correlation between voluntary job change and job satisfaction, which further demonstrates that personal choice and self-determination have a lot to do with how satisfied a worker is in their position. Perhaps unsurprisingly, a loss of job security is associated with adverse mental and physical health effects, such as increased blood pressure and chronically decreasing body mass index due to anxiety (Ferrie et al., 2002). Notably, an increase in job security at a later date was not found to negate these negative effects (Ferrie et al., 2002). This means that a loss in job security can affect a worker for years to come, even when they enter a more stable position.

An HR expert suggested one approach to addressing these types of stress:



For the smaller studios, sometimes you can forecast, but you really don't know how the game is going to do; [so] set the expectations, to help your employees plan ahead. [Say, for example,] 'If this isn't a success, we're going to help you find the next job' (Take This, 2018).

Of course, job insecurity means that layoffs and studio closures do happen, leading to financial stress, challenging resumes, and the familial and financial stress of relocation. It is incredibly important for companies to engage with potential employees in conversations about the financial burden of location and the on-boarding process (Raines, 2011). Companies can help employees tune their resumes towards potential success, highlighting the positives of a range of experience. For example, by having a wide variety of experiences, individuals have been found to be better at adjusting to new work and workplaces (Beyer & Hannah, 2002). Increasing the diversity of work allows for people to grow in their career, maintain skills, and remain resilient in their professional identity (Beyer & Hannah, 2002).

We would also suggest that the industry explore ways to insulate particularly vulnerable employees and contractors from the greatest stressors and risks associated with studio layoffs and closures. These could take a variety of forms but would all have a financial support component as well as offering mental health crisis support (similar to the model of Employee Assistance Programs increasingly offered as benefits in US companies).

# Inclusiveness and Diversity

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Games are mainstream. In 2018 US video game industry revenue was \$43.4 billion (Entertainment Software Association, 2019), which is approximately the same revenue generated by the US movie industry (Robb, 2018). Video games sales were estimated at \$22.4 billion in 2014 (Entertainment Software Association, 2015), meaning revenues nearly doubled in five years.

Despite the growth of the video game industry over the last several decades, there remains a lack of both diversity and inclusion in video game content and studio cultures. The global game industry remains predominantly male (74%) and white (68%), according to recent Developer Satisfaction Survey data (Weststar, J., O'Meara, V., Legault, M. 2018), though there is some evidence of a recent up-tick in gender parity (Game Developers Conference, 2018). In 2017, Chella Ramanan called the lack of women in the gaming industry “a diversity problem (that) can be fixed,” noting that women comprised just 14% of game industry workers in the United Kingdom. As noted above, gender is only one element of diversity. In terms of ethnicity, the 2017 DSS data reported that 18% of respondents identified as East/South East Asian (though they note this number is likely inflated due to higher than expected response rates in Taiwan), 5% identified as Hispanic or Latino, 2% identified as Arabian or West African, and 1% identified as African American. Of interesting note, the 2017 DSS found that game industry employees report identifying as homosexual (5%) and bisexual (11%), at a greater rate than the general US population (3.5%)

The term diversity refers to a range of identities, perspectives, and ideas within a group or structure, whereas inclusion refers to the state of any given individual being included within a group or structure. Put another way, diversity means that there are a range of individuals present whereas inclusion means each individual is valued, respected, heard, and supported. Inclusion is a critical component of mental wellness, as it benefits self-esteem, sense of belonging, development of community, and more (e.g.,




Pilling et al. 2017).

A lack of diversity and inclusion and the presence of attitudes that perpetuate these kinds of workplace disparities have resulted in hostile and challenging work experiences across game companies and the social media platforms most central to the industry. For example, the culture identifying “real” gamers as those who play a specific type of game has been used in hiring practices in a major studio placing emphasis on hiring the “core gamer” (D’Anastasio, 2018). D’Anastasio’s article showed that, while the “core gamer” identity was purportedly intended as a meritocracy, in practice it was experienced by women and other marginalized groups in the company as a reflection of more misogynistic “bro culture.” However, these concerns extend beyond women and misogyny.

Still, it is clear that the vast majority of people inside and outside the game industry believe inclusion and diversity to be important issues. An Electronic Arts survey of 2,252 individuals found that only 13% of respondents believe it is not important to make games more inclusive for diverse audiences (Shi, 2019). The Electronic Arts survey also found that approximately three out of five players (61%) were concerned with abusive chats, hate speech, sexism, or racism. Despite this, the most recent IGDA Developer Satisfaction Survey indicated that 33% of game employees perceive the game industry did not offer equal treatment or opportunities for all (Weststar, J., O’Meara, V., Legault, M. 2018).

A female HR manager, with both personal and professional experience of this, noted:

“There’s a double-edged sword. It’s the fact that you’re different. On the negative side, your difference is being weaponized against you because people are not familiar, thus they exclude you and make you feel like you’re not a part of the in-group because you are different. On the positive side, where they want to embrace diversity, and want to appreciate the fact that you are the other and want to include you because of the fact that you are different, [and] there’s undue pressure to educate them on your perspective and what your experience is. And that they just look to you as



the one representing that group... That's a generalization. You are a unique individual - not that that isn't connected with people who fall within your demographic, but that you shouldn't shoulder responsibility of speaking for everybody who looks like you, too. Especially if it's coming from a positive place, it can still have a negative impact on people" (Take This, 2018).

But diversity and inclusion are good for business, too. There is a strong, significant correlation between a diverse employee base and financial performance. In fact, even greater financial gains among large companies were made when leadership was diverse (Hunt, Princee, Dixon-Fyle, Yee, 2018). Beyond financial impacts, increased racial and gender diversity in employment was found to increase innovation (Gao and Zhang, 2017) as well as group think (Levine et al, 2014). In a study looking at price bubbles in financial markets, Levine et al (2014) noted that,

*“price bubbles arise not only from individual errors or financial conditions, but also from the social context of decision making. The evidence may inform public discussion on ethnic diversity: it may be beneficial not only for providing variety in perspectives and skills, but also because diversity facilitates friction that enhances deliberation and upends conformity.”*

In extrapolating this to other work environments, the argument for diversity in creating a larger diversity of game types, game play, and game subject matter is clear.

## Diversity in Gaming

### Gender

Gamergate, the online harassment campaign that overwhelmingly targeted a group of female developers and journalists, further highlighted the stressors involved in being female or non-binary in the game industry, and in consumer game spaces (Mortensen, 2018). This movement, which started in 2014 and remains problematic today, quickly devolved from baseless accusations to character assassinations, misogyny, hate speech, and death

threats (Campbell, 2014), the repercussions of which were severe. Personal information, including home addresses of the targets and their families, social security numbers, and even nude photos, were posted online forcing people from their jobs and their homes (Robertson, 2014). While those involved in the harassment during Gamergate were primarily consumers, this type of behavior is an ongoing and relatively regular aspect of online interaction for women who make games and study games (Webber, 2017; Chess & Shaw, 2015; for more about Gamergate, see Mortensen, 2018 and Salter, 2017).

Gamergate was not the first example of widespread, gender-based discrimination within the game industry (Mortensen, 2018; Consalvo (2012) also summarizes several incidences of harassment), but it is certainly the most prominent manifestation of ongoing problems that women and non-binary individuals face. Like many of the aspects of diversity mentioned below, there is a dearth of peer-reviewed research or specific data about the prevalence or impact of gender-based discrimination in the game industry.

More widely, we know that discrimination, both overt and subtle, leads to an underrepresentation of individuals of minority status in science, technology, engineering, and mathematics fields, with discrimination negatively impacting job performance and physical health (O'Brien, McAbee, Hebl, and Rogers, 2016). Beyond that, the social/emotional impacts of discrimination become compounded when gender and ethnicity intersect (Combs & Milosevic, 2016).

The problem is pervasive. According to research by McKinsey & Company (Thomas et al, 2018), 64% of women (and 71% of lesbian women) experience microaggressions (such as demeaning comments or being mistaken for someone more junior) in the workplace. More alarmingly, the same research indicated more than one in three women have experienced sexual harassment at some point in their career. Furthermore, they find that employees of all genders believe that companies don't do enough to create a safe and respectful work environment. They report that fewer than one third of employees believe enough is done in their workplaces to address bias, sexual harassment, and disrespect. In part, they say, this is due to underrepresentation, which starts with a smaller pipeline of women in entry level jobs and gets worse as promotions recognize men more than women

up the corporate ladder (with some improvement at middle management levels, although not enough to maintain a good pipeline to the C-suite).


## **Sexual Orientation and Gender Identity**

While representation of LGBTQ+ (Lesbian, Gay, Bisexual, Transgender, and Queer) individuals may be strong in the game industry in terms of employment proportions compared to the general population (Weststar, O'Meara, & Lagault, 2018), there are many stressors related to how individuals express, monitor, and self-censor their sexuality in work contexts (Holman, 2018). Further data is required in this area to understand the experiences of LGBTQ+ individuals specifically working in the game industry, though a review of a variety of more generalized employment studies indicated that LGBTQ+-supportive policies in the workplace lead to greater employee commitment, greater overall job satisfaction and productivity, and improved health outcomes, as well as reduced rates of discrimination (Badgett, Durso, Kastanis, & Mallory, 2013). This is especially important, as it is discrimination which has been linked to the greater-than-average occurrence rates of mental health diagnoses in LGBTQ+ populations (e.g., Bockting, Miner, Romine, Hamilton, & Coleman, 2013; Choi, Paul, Ayala, Boylan, & Gregorich, 2013).

## **Ethnic Diversity**

According to a survey by Catalyst (Travis & Thorpe-Moscone, 2018), people of color practice high levels of vigilance and experience high levels of stress in workplaces related to their race and ethnicity. They found that if people of color are not supported by explicit inclusionary practices and norms in a workplace, their ability to deliver high-quality work suffers. Accordingly, retention of these individuals suffers. The survey also found that self-reported levels of creativity were especially high among highly-engaged and well-supported people of color, indicating that, with proper support, these employees may deliver exceptionally high quality work.

Our conversations affirm these findings. In our interview with a developer of color in a AAA company, we heard about this challenge:



I feel like there's always an element of, I'm not being unapologetically and fully me. There's certain mannerisms that I can't really do because I have to think, "do I want to spend a bunch of time explaining that to people?" There's a lot of words that I might use, just the way I present myself. It's a daily process - there's a lot of code switching that happens. How do I present myself to people to get through the day with the least amount of stress? It's kind of always a low-level of anxiety (Take This, 2018).

## **Ability, Neurodiversity, and Mental Health Status**

Research on the topics of accessibility and accommodation based on physical ability, neurodiversity (those identified with a wide variety of neurocognitive diagnoses such as autism, attention deficit hyperactivity disorder, and sensory integration disorder, among others), and mental health status as they directly apply to the game industry is limited, and we encourage further study in this growing domain. As with other sections of this paper, there are more generalized findings which bear mention. While mental health challenges in the workplace are covered throughout this paper, there is emerging evidence to support the notion that systemic, managerial-level education and training has positive effects on the wellbeing of multiple levels of an organization (Boysen, Schiller, Mörtl, Gündel, & Hölzer, 2018; Gayed et al., 2018).

Over the last several years, more of a focus has been placed on the idea of neurodivergent diagnoses such as autism as natural expressions of the human genome, instead of a disorder (Masataka, 2017). While this is an emerging field of understanding that requires more research, it, along with growing self-advocacy on the part of those with autism, has lead to advice on how companies can utilize the unique sets of skills by those with these diagnoses (e.g., CIPD, 2018). One of the authors of this paper (Boccamazzo) is open about his autism diagnosis, and has privately remarked how many business events and opportunities, especially networking opportunities, are conducted in noisy, crowded environments, often with excessive visual stimulation (e.g., night clubs or crowded bars), which many people with neurodivergent diagnoses endure with substantial hardship, if they are able

to at all. This presents a subtle but significant systemic challenge in the ability of neurodivergent individuals with valuable skills to form informal business relationships which are often crucial to career advancement and business growth.

Regarding disability and accommodations in the workplace, the Americans with Disabilities Act of 1990 both prohibits discrimination of people with disabilities as well as requiring employers to provide reasonable accommodations to employees who would otherwise be able to fully perform the functions of a given job. Unfortunately, perceptions of stigma towards disability accommodations prevent many from requesting the accommodations they deserve and to which they are fully entitled, which also robs companies of talents from which they would otherwise benefit (Baldrige & Veiga, 2001; Baldrige & Veiga, 2006); research on providing accommodations in the workplace, in this case due to psychiatric disabilities, reported increased hours of work engagement and a reduction of job termination risk (Chow, Cichocki, & Croft, 2014).

One hurdle that exists to retaining valuable employees who happen to have some form of disability is ongoing beliefs doubting the capabilities of those with disabilities. Sundar (2017) noted the importance of informal, tacit support in the workplace, communicating that those with disabilities are not simply accommodated, but valued. Unfortunately, Chan et al. (2010) concluded that many human resources and hiring managers do not perceive those with disabilities as being as productive and reliable as employees, though they believe manager-level training on the relevant laws might positively impact hiring practices regarding inclusion of employees with disabilities.

## **Representation of Diversity in Games**

As noted above, it is reasonable to believe that the industry will produce games with a wider range of appeal which better represent the voices, experiences, and lives of the people who play them, an idea echoed by Elaine Chase, Vice President of esports at Wizards of the Coast and Hasbro, who noted: “Having a diverse set of people brings in a greater skill set” (Chase, Olson, Hoyer, Lau, & Snyder, 2018). Mary Olson, Executive Producer at 343 Industries, agreed: “Having a diverse team, building a diverse team is putting



the game first. That's what we need to make the best game we can make" (Chase, Olson, Hoyer, Lau, & Snyder, 2018).

## Building a diverse team is putting the game first.

The game audience is large and will only get larger and more diverse. As Adrienne Shaw notes in *Gaming at the Edge*, "diversity

in games is a design imperative for this creative industry" (2014, p. 230). Specifically, diversity in this case means a more equitable representation of people identifying as people of color (POC), non-binary, LGBTQ+ (lesbian, gay, bisexual, transgender, queer, intersex, and asexual), women, disabled, neurodiverse, or those experiencing mental health challenges. In this section, we address the mental health outcomes related to exclusion and lack of representation, the arguments for increased parity in the industry, and identify steps for further research and action.

An independent game developer told us a story about how she feels representation creates more diverse games, relating how she showed a game with a young, female lead at a small game convention:

My booth was completely crowded. I had little girls going, 'look, mom, that's me!' I made a game that I would enjoy. I think that just goes to show that having diversity on your design team can lead to diversity in your player base - because I designed a game that I thought was cool. Turns out, other girls think it's cool too! (Take This, 2018).

Mark Rosewater, Head Designer of *Magic: The Gathering* affirmed this experience in a Tumblr post to his community, noting how

*"...every time we branch out (and I'm not exaggerating, every time) and represent a new segment of people, I get heartfelt messages from them about how much it means to them to see themselves in the game" (2018).*

Research from Passmore and colleagues (2018) echoes these experiences:

*People who game willingly represent themselves as fictional characters. However, players of color agreed that experiences built around their race-ethnicity are more important than not, and are suggested to benefit more from accurate representations of their race-ethnicity. Players of color generally agreed that accurate representation improves their experience and want to game as themselves, freed from everyday social restrictions and stigmas: ‘My gaming identity comes closest to the identity I use when associating with close friends and family in that it is more open and unguarded compared to my professional work identity. Because digital gaming offers a degree of anonymity, I feel more free to express myself and not have to worry about following conventions or social norms.’ (Passmore et al, 2018, p. 9)*

But representation doesn’t just affect people from marginalized groups. Media has the ability to reduce prejudice in a variety of ways. Moyer-Gusé and colleagues found a reduction of prejudice when they asked non-Muslim participants to watch a TV show about a Christian man learning to navigate and participate in a Muslim community while living with a Muslim family (Moyer-Gusé, Dale, & Ortiz, 2018). Ultimately, the study found that among those who watched the TV show, prejudicial anxiety about interaction with people from a different - and often demonized - group was significantly reduced (and the willingness and sense of self-efficacy about engaging in a potential interaction increased) through consuming media where they watched someone like them “learn the ropes.” Similarly, games, with their participatory and active engagement, are a powerful form of media in this regard. Ironically, given the violent context, Adachi and colleagues found similar reduction of intergroup prejudice through cooperative play in a shooter game (Adachi, Hodson, Willoughby, & Zanette, 2014).

In 2017, Kowert and colleagues proposed that the exclusion of females in the video game industry has contributed to a cyclical model of exclusion (see Figure 1) in video game content and culture. They argue that a self-perpetuating cycle of exclusion within the video game industry has contributed to male dominance within the field and contributed to the creation of gendered game content (i.e., a general lack of female protagonists, an oversexualization of female characters; see Beasley and Standley, 2002, Fox, Bailenson, & Tricase, 2013, Downs & Smith, 2010 and Ivory, 2006 for



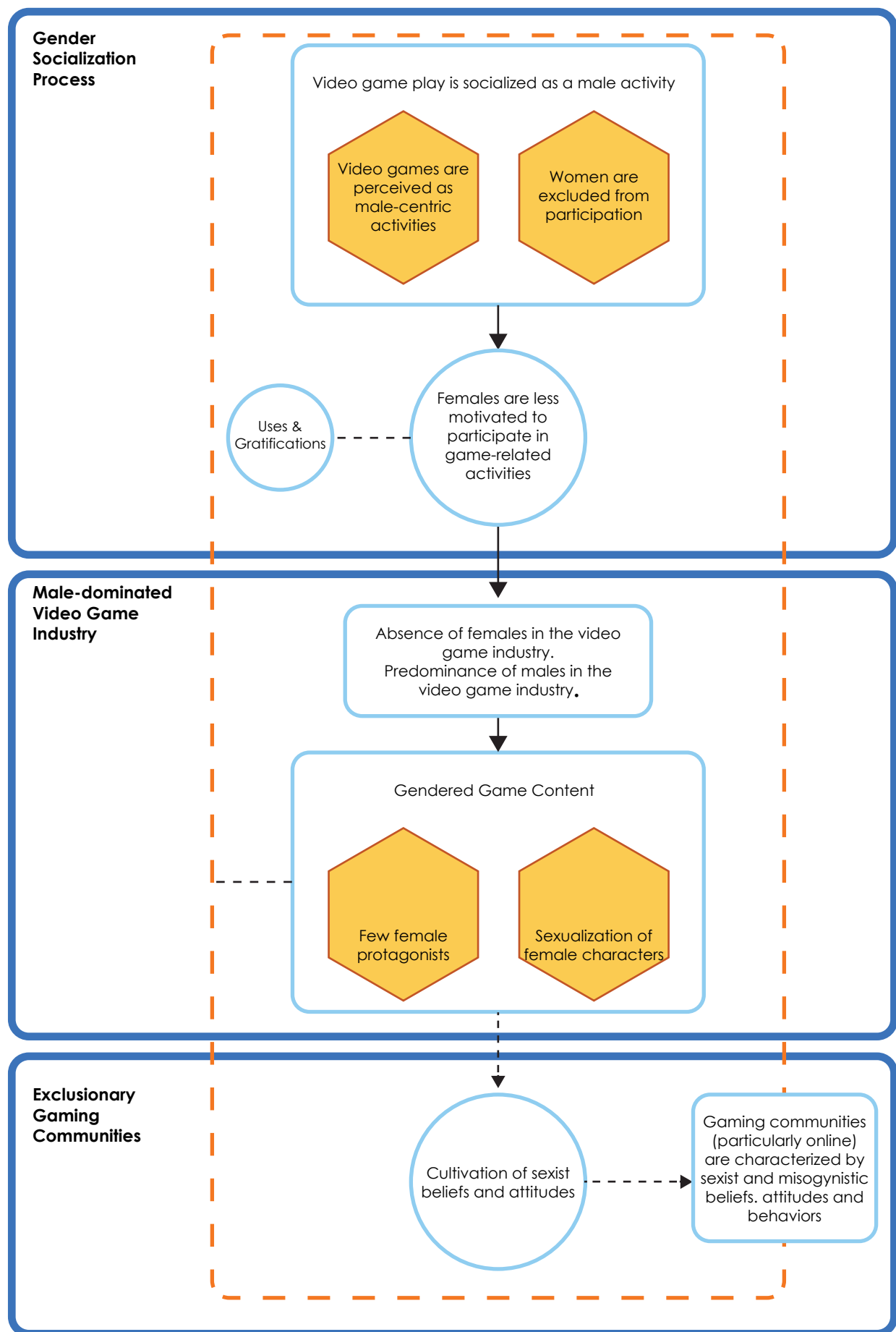


Figure 2. Model of exclusion and sexism in video game content and culture (Kowert, Breuer, & Quandt, 2017).

more). That is, the absence of female developers in the video game industry has led to a predominance of gendered content, which, in turn, has potentially contributed to the cultivation of sexist and misogynistic attitudes and beliefs within the industry and community at large (Behm-Morawitz & Ta, 2014; Festl, Scharkow, & Quandt, 2013; Stermer & Burkley, 2012). This has led to further establishing video game play and industries as male spaces, limiting the sense of social inclusion and acceptance for females (Hartmann & Klimmt, 2006; Lucas & Sherry, 2004; Sherry, Greenberg, Lucas, & Lachlan, 2006), and perpetuated the exclusion of diverse groups. While the authors focus their model on the exclusion of females specifically, it could be easily applied to any of the underrepresented populations within the industry as a whole.

Greater diversity would also provide opportunities to challenge norms in both work environment and game content, and multiple research studies affirm a desire for greater diversity inside the industry - if lacking in concrete steps to achieve it (Ruggill, J., McAllister, K., Nichols, R., Kaufman, R., 2017). Further investigation of this matter is warranted.

Adrienne Shaw's seminal 2014 ethnography of marginalized gamers, *Gaming at the Edge* found that *"sexuality is present and relevant in every single video game made... For example, sexuality and sexual politics are present in every first-person shooter that employs sexual banter or 'bro' humor"* (p. 205) and is therefore absolutely central to how we view representation - as an always present, always relevant aspect of game design and narrative. She goes on to note, that:

*"The goals of those invested in diversity in games should not be to prove the importance of representation but rather to argue for the importance of representation in a way that does not dismiss the playfulness of gaming."* (p. 219)

In other words, she argues, since representation doesn't seem to matter to people who play games, broad categories of representation that aren't currently common could be included without widespread backlash. However, representation would be significant for those members of underrepresented groups in their experience of playing games, and potentially push subtle shifts in existing tropes.

## What's next?

It is abundantly clear that the industry can, and should, do more to increase diversity in the industry, and that doing so will positively impact the mental health of those making and playing games. The devil, however, is in the details. Changes are required in hiring, mentorship, promotion, culture-building, online support, and other aspects of retention and professional development. These are all factors of changing the culture of game companies - a challenging, time-consuming, and difficult undertaking that can result in widespread staff departures, uncomfortable conversations, and skepticism.

There are, also, significant gaps in our understanding of how a lack of diversity impacts the industry. Therefore, we present the following questions for further study:

- ◆ Where are women, POC, and LGBTQ+IA individuals celebrated and supported in the game industry? Can those models of leadership and support be articulated and replicated?
- ◆ How, or does, gender representation impact the types of games that are made, and if so, in what ways?
- ◆ What strategies might companies and divisions adopt to address hiring and promotional biases?
- ◆ What networks and other sources of support can women, POC, and LGBTQ+ individuals lean on to find support and allyship? How can we support and strengthen those networks and resources?
- ◆ How safe, supported, and welcomed do people feel in their workplaces, and what specific challenges or opportunities do marginalized individuals have in game workplaces?

Hunt and colleagues (2018) found that leaders in diversity and inclusion shared four imperatives: CEO leadership, defined diversity priorities based on business strategy, a targeted portfolio of initiatives, and tailored strategies to maximize local impact. In addition, the study found,

*“there are critical areas companies tend to fall short on: these include leadership and management accountability, a fact-based and compelling business case for I&D [Inclusion and Diversity], and the coherence and prioritization of the resulting action plan. We also found that while progress on representation can be brought about relatively rapidly with the right set of initiatives, embedding inclusion sustainably within the organization can take many years, often requiring action outside the organization” (p. 28).*

Take This has developed employee and manager trainings on a range of topics that address some of these needs, and multiple, excellent, diversity training programs exist. These are an important and necessary first step in a long process of individual and company-wide self-discovery and change. These workshops provide tools for developing new perspectives through self-reflection, understanding structural and institutionalized racism and sexism, and starting company-wide conversations about how people are, or are not, welcomed into a workplace.

# Public Perception of Games and Game Makers

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While public perception of games does not, to the best of our knowledge, directly impact the mental health of those in the game industry, it remains a potential secondary stressor. In particular, online interactions with the public can demand significant attention and cause distraction, especially if the public draws conclusions based on moral panic rather than established evidence. Most significantly, the ability of the public en masse to access developers both at and outside of work is an area of workplace stress in need of attention.

## **Social Media Interaction of Employees With the Public**

The game industry relies heavily on social media, especially Twitter and Discord, for direct communication with consumers and other industry professionals. Social media sites have evolved from simple social networking to an interconnected web of work, personal, and promotional circles. For better or for worse, websites like Twitter and Facebook give employees a chance to have a voice in an immediate and potentially viral way. The demands of being an industry employee and simultaneously wanting to develop or maintain one's personal brand and employers' brands frequently require that game makers use social media. Many of these industry employees create vibrant and fun communities on Twitter through personal accounts to promote their work.

This type of overlap creates an integration of personal and professional identities, blurring the line between what is for work or for personal purposes (Van Zoonen, Verhoeven, & Vliegenthart, 2016). An unfortunate result of blending personal and professional spaces is the strain of the sometimes-conflicting role, creating poor “in-role performance”, meaning that the fatigue, anxiety, and/or tension from one role could hamper a person's ability to perform the other (Van Zoonen et. al., 2016). This blurring of roles

crashed into the public awareness in summer of 2018 when two ArenaNet employees were fired due to their online interactions via their personal Twitter accounts (Farokhmanesh, 2018).

Aside from the blurring of roles, there are also risks and stressors linked to public social media use, such as the organized backlash and harassment of subgroups of fans. Gamergate, the harassment campaign that began in 2014, is arguably the most famous - though not the first - example of how public backlash by a small subset of people can directly impact the mental health of industry employees (Mortensen, 2018). It resulted in an infamous and psychologically damaging public attack on predominantly female members of the game industry by a subset of predominantly male fans and developers. Danielle Citron (2014) documented how harassment of many types pushes women out of the public sphere across many industries and contexts - not just games.

More recent fan incidents include the wave of abuse directed at Marvel developer Insomniac and publisher Sony about a character costume omitted from their Spider-Man game (Asarch, 2018) and the above-mentioned 2018 firing of two ArenaNet employees for messages exchanged on Twitter (Farokhmanesh, 2018), the latter of which also involved misogynist verbal attacks on one of the employees. A recent hacking experience related to us by an indie developer exposes the complexity of some of these attacks. In an open beta for an upcoming game, a hacker started killing players with the express purpose of then gloating about their prowess on the game's Discord channel. In fact, the hacker requested - to the developer - that their Discord handle be reinstated, even after the hack was contained, so that they could engage in gloating behavior from their original account.

All of these incidents highlight the particular challenges and dangers of social media faced by game industry employees, especially those who do not identify as white, cis-gender, heterosexual males. Adding to the challenges is evidence that the commonly-cited tactic of "block them" is ineffective in stopping harassment (Jhaver, Ghoshal, Bruckman & Gilbert, 2018), and this remains an ongoing concern of streamers and content creators, especially those facing long-lasting harassment (Grayson, 2019). Interactions with hostile public can result in long-term mental health repercussions such as Post-Traumatic Stress Disorder, as anonymously reported to us by several

targets of harassment during and after Gamergate.

Given these examples and others, we have concerns about mental health stressors related to how individuals and the companies who employ them navigate online interactions and provide support and/or validation to both their employees and fans. Furthermore, the game industry continues to experience significant public perception challenges that can invalidate and challenge game makers who believe deeply in the positive impact of their work on the world. These issues include the violence-and-video-games link, game addiction, and gambling, which we cover in more detail above.

One significant way companies can be more supportive of their employees' mental health is structuring social media response instructions into their policies. The IGDA (2018) created a guideline for their employees and representatives that illustrates this point well. Notably, it includes explicit guidance about posts, that employees can elect voluntarily to represent the company, contacts for support, and consequences of rule-breaking. Most importantly, it describes what rules exist and where to find them; in this case, in their internal code of ethics (IGDA, 2018).

From social media policies shared confidentially with us, it is clear that companies are increasingly understanding the necessity of providing support to their employees during flame wars or episodes of harassment. These can include referral of harassment to community managers, cooling off periods, and third party assessment of interactions. We are heartened to see these policies beginning to take shape.

Creating guidelines for employees can help clarify how to manage a plethora of social media situations. It allows for a dialogue between employees and managers, empowers employees to be more able to respond in a meaningful and safe way, allows for employees to remain aware of the legalities involved, and provides a series of backup plans if one of the steps in the plan fails. We highly encourage companies to consider how they can bolster their policies to better support their employees. Below are a few ideas that companies might consider including in their social media guidelines:

- ◆ A scaffolding multi-step response plan.
- ◆ Guidance to resist the temptation to respond immediately to a post.



Instead, touch base with company representatives as they are available. If company representatives are unavailable, who is next in line?

- ◆ Discuss what is encouraged, allowed, and discouraged for company related-content postings. Indicate who to go to for questions with this, if employees are unsure.
- ◆ Reminders of pertinent NDA expectations.
- ◆ How to handle direct engagement with players/fans.

## Public Perception of Games

Concern around the potential negative impacts of games on players is as old as video games themselves. Once digital games expanded beyond the university labs where they were first developed, the attention they garnered from researchers and the press often reflected a fear of the new medium. These original fears persist today, specifically in relation to violence, video game addiction, and gambling.

### Violence

The first example of public concern about violence in digital games was around *Death Race*, a black-and-white arcade game released in 1976. Controversy around violence in games continued through the 1980s and began to peak in the early 1990s with the release of *Mortal Kombat*. The debunked connection between the violent video game *Doom* and the perpetrators of the 1999 Columbine High School shooting spotlighted violent games as a clear and present danger to society. In 2005 and in 2015, the American Psychological Association released a paper summarizing reports on the impact of violent games and reported finding a clear connection between violent video game play and aggression in players (APA Task Force on Violent Media, 2015). However, the research underpinning these beliefs and statements is problematic at best, filled with questionable research practices, media sensationalization, and false equivalency.

In the last two decades, research debunking the myth of violent video games leading to violent behavior has been piling up in a variety of ways. First, major contributions from scholars using rigorous and replicable research



methods have found that not only do violent video games not lead to increased aggressive behaviors (Coulson & Ferguson, 2016; Ferguson, 2007; Przybylski & Weinstein, 2019) but are actually correlated with a decrease in violent crime (Coulson & Ferguson, 2016; Markey & Ferguson, 2017). Second, several high-profile studies that purported to find a clear and causal connection between violent video games and aggression have been retracted in the past few years due to statistical and methodological inaccuracies (Çetin, Wai, Altay, & Bushman, 2016; Whitaker & Bushman, 2014). In other words, some of the strongest evidence for violent video games leading to violent acts are being pulled off the shelf because of bad data. And lastly, long-term social trends refute violent video games as a cause of violent behavior. Crime rates have been on a steady downward trend since the 1990s and are at a 30-year low (Federal Bureau of Investigation, 2017) while video game sales have more than tripled in the same time frame (Statista, 2016).

## Addiction

The term addiction is used in common parlance to describe an activity that a person enjoys and engages in fully. The activity often has a slight negative or guilty pleasure connotation, such as “I’m addicted to coffee” or “I’m addicted to this TV show.” This use is in stark contrast with the clinical definition of addiction as a problematic and harmful dependency on a substance. While concern about players spending too much time or money on digital games goes back to the 1970s, the social consciousness around games as an addiction in the clinical sense has recently moved to the forefront.

In the last decade, there’s been an increase in viewing video games as an addictive activity, especially in Asian countries where game addiction boot camps and detox centers are more prevalent (Russon, 2016). In the US, games addiction gained public attention in 2016 with the announcement of Gaming Disorder as a proposed diagnosis in the World Health Organization’s (WHO) ICD-11, the international manual for diagnosis. The diagnosis was recently approved, despite questions remaining about its definition and underlying accuracy. The Diagnostic and Statistical Manual 5th Edition (DSM-V), the diagnostic guidebook for mental health professionals, sidelining the diagnosis of Internet Gaming Disorder as an issue in need of further study rather than a formally recognized condition.

Mental health professionals and members of the gaming community have voiced concern over problematic or dysregulated gaming among the most extreme players (Aarseth et al., 2017; Van Rooij, A. et al, 2010; Lopez, G., 2018). However, the current state of research does not support gaming addiction as a disorder or even fully support the contention that it qualifies as a behavioral addiction (rather than being, say, a subcategory of an impulse control disorder). Simply stated, there is not enough research or depth of understanding about excessive gameplay to support the creation of a new construct (Aarseth, et al., 2017). Furthermore, the current criteria for gaming disorder in the ICD-10 has received significant negative pushback from the mental health community for being worryingly vague and lacking in diagnostic differentiation, even by those who support games addiction as a legitimate construct. Significant additional research is required in the area of game addiction.

## **Gambling**

The central point where digital games and concerns about gambling converge is loot boxes. A loot box is a digital item that contains randomized digital content. In other words, it's a digital mystery box containing an unknown virtual item that may or may not have value to the player. Players obtain loot boxes in a variety of ways. For example, a player might receive a loot box for completing a quest or trading in in-game resources or items. Some loot boxes, however, can be bought using real currency (paid loot boxes) and it's this kind of loot box that is drawing attention from agencies such as the US's Federal Trade Commission. Other countries, such as Belgium, have identified loot crates as violating their anti-gambling laws and have banned buying loot crates outright (Gerken, 2018).

In psychology, a variable-ratio is a reinforcement schedule where the user receives a reward after an unpredictable number of responses. One example of the variable-ratio schedule can be seen with slot machines, where the money (reward) is delivered after an unknowable number of lever pulls (responses). This is the arguably the most powerful kind of reinforcement schedule because it is the most resistant to extinction, keeping individuals engaged as they never know when the next reinforcement is coming (Ferster & Skinner, 1957). However, its potency is why the instruments that use a variable-ratio schedule can become problematic.

What is not clear is whether or not paid loot boxes actually function on a variable-ratio schedule and thus are akin to gambling. Unlike a slot machine, a player is guaranteed to get something when they pay for a loot box. This action is similar to those who buy baseball card packs or surprise-egg toys; the buyer has an idea of what they're paying for but the actual content is unpredictable. In this sense, it is distinctly different from gambling where the outcome is always either win or lose.

Currently, the amount of research available to address these kinds of questions is nearly non-existent and much of what does exist suffers from notable methodological limitations (Kowert, 2018). The most comprehensive study of loot boxes and gambling behaviors to date surveyed over 7,000 self-identified gamers and found a strong relationship between the amount of money spent on loot boxes and problem gambling indicators; the more a player spent on loot boxes, the more likely they were to respond affirmatively on a questionnaire about problematic gambling (Zendle & Cairns, 2018). However, the authors clearly stated that this research is correlational and it remains unclear whether persons who reported symptoms of problem gambling are attracted to loot crates or if loot crates lead to problem gambling indicators. It is also important to note that this is a single study of self-identified gamers using self-report measures of loot crate purchases and gambling behaviors. Future research should strive for a randomized collection of participants as well as tracking of actual spending and gambling habits (not just what participants recall spending or doing).

# Conclusion

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As much as we have highlighted the challenges in Twitter use in the game industry in this paper, it remains a vital space for communication, validation, networking, and news among people who make and play games. So, in concluding this paper and describing next steps, we turn to a Twitter thread where developers described what they needed, wanted, and missed from their studios. The responses, echoing many of the recommendations and themes in this paper, included flexibility in work hours and location, especially for parents and, related to that, managers who “walked the walk” and didn’t themselves work 60-80 hour weeks. Other needs that surfaced focused on clarity: clear evaluations based on deliverables rather than face-time, clear internal communication and planning, and clear job descriptions.

Notably, in both the 2018 IGDA and 2019 GDC surveys, support for unionization has increased in all sectors of the industry, and the movement’s talking points are very similar to the challenges and needs described above.

## What’s Next?

Many of the negative mental health outcomes described here can be mitigated or avoided with the implementation of thoughtful, respectful policy changes. Some will require significant changes to organizational and industry culture and will be harder to move forward. However, all the necessary changes have the potential to transform the industry into a more sustainable, healthier place for all people to work and make great games.

In addition to already identified solutions, we have also highlighted the need for further research to better understand a range of experiences and challenges, especially those within marginalized communities and for managers and leaders. Identifying the experiences and needs of these groups will enable us to make more effective recommendations for change.

In summary, we have identified the following next steps that are necessary to address the challenges outlined in this paper, and will be convening industry

leaders to identify approaches and best practices:

- ◆ Manager and leadership training around mental health awareness, diversity, and change management
- ◆ Manager support for change management and studio upheaval
- ◆ Structures and training to support more inclusion and acceptance
- ◆ Policies to support portability and transition
- ◆ Further research on:
  - Outcomes for women, POC, LGBTQ+ individuals
  - Outcomes for very junior and senior employees
  - The role of toxic behavior on social media within the video game industry
  - Cross-industry compensation review
  - Flexibility in NDAs for job searches

As we explore these areas of opportunity, we will take cues from companies actively working to tackle many of these challenges. Of course, the “perfect” workplace is both subjective and hard to create. There are, however, many fantastic game companies focused on various aspects of mental health and employee wellness. We hope to learn from the following examples (among others) over the coming year:

- ◆ Big Huge Games’ low-crunch, high-diversity work environment
- ◆ Ubisoft’s pool for employees coming off projects
- ◆ Certain Affinity’s ability to avoid layoffs
- ◆ Wooga’s top-down focus on mental health
- ◆ Bungie’s focus on diversity

- ◆ Microsoft's focus on work-life balance

## In Celebration

The game industry, as this paper has indicated, can be a challenging, sometimes downright unhealthy place to work. But that's only a part of the story, and threatens to overshadow the great joy, creativity, beauty, and excitement that comes with making and playing games. Again, we turn to Twitter, and a thread started by Steven Lumpkin:



The responses were exciting, compelling, and diverse:







**Juan Callejas**  
@Ju1Design

Replying to @Silent0sirius

Hmm.. I guess I've just noticed how much joy people can get out of videogames, and considering what's happening around the world I think we could all use more joy and happiness. I think if I can make that happen even just a tiny bit more, then I suppose I'd call that a success.

12:11 PM · Jan 15, 2019 · [Twitter for Android](#)



**One-Winged Eagle**  
@King\_Crackers

Replying to @Silent0sirius

I make games because I think it's fun, and because I want to translate fictions and things that I love into a playable dynamic, hopefully convincing people to see what I see and love it too. And if I can inspire justice, compassion, and/or understanding, all the better.

11:54 AM · Jan 15, 2019 · [Twitter for Android](#)



**DC, [THEY] of Flowers and Ink**  
@DungeonCommandr

Replying to @Silent0sirius

I want people to see their stories represented, to be able to explore their specific lives and issues in a safe environment, and to change the world by giving people opportunities to see life through someone else's eyes.

11:16 AM · Jan 15, 2019 · [Twitter for Android](#)

Ultimately, the de-stigmatization of mental health and increased mental health literacy are required industry-wide, reflecting the necessity of a broader societal shift. Mental health and the factors that support it are as significant in addressing overall productivity and functionality in workplaces as physical health. A comfort with understanding mental health challenges as normal and in providing accommodations and support for addressing them are essential to creating a work culture that embraces diversity, fully supports people who make games, and recognizes that mentally well people are better, more productive members of a workforce.

Take This is leading the charge to normalize the conversation about mental health inside the game industry and will be taking these recommendations to human resources professionals across the industry to test and develop over the next year. In the meantime, we continue to provide trainings and workshops for game companies who wish to improve and support the mental wellbeing of their employees. These initial steps are necessary, though not sufficient, to promoting a healthy, productive, and diverse game workforce.

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