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Collaborative Video Game Design Work and Diversity

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Collaborative Video Game Design Work and Diversity

by

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Dissertation

Presented to the Faculty of the Graduate School of

The University of Texas at Austin

in Partial Fulfillment

of the Requirements

for the Degree of

Doctor of Philosophy

The University of Texas at Austin

August 2019

Dedication

To my mother, who mailed me a framed, handmade slogan of Keep Calm and Finish Your Dissertation: This one's for you, Mom.

Acknowledgements

First, I have to acknowledge and thank all of my fellow participants in this research: without you, this dissertation quite literally could not exist.

I would next like to thank my committee for all of their wonderful support and guidance over the past (what feels like forever) years: Dr. Loriene Roy, Dr. James Howison, and Dr. Clay Spinuzzi. Your contributions have been invaluable.

Special acknowledgements go to my advisor, Dr. Kenneth R. Fleischmann, for shepherding me through this Ph.D. journey with the most wisdom, grace, and patience that anyone could possibly ask for—especially whenever I got a little lost in the shrubbery.

Finally, an unending thank you to my partner, Christopher Kiel, Esq.: this is the one where we win.

Abstract

Collaborative Video Game Design Work and Diversity

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The University of Texas at Austin, 2019

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The video game design industry is one of the most significant fields for both producing and using Information and Communication Technologies (ICTs) today. Many industry leaders, researchers, and players continue to argue that diverse representation in both games and the workforce matters for the health of the industry and for an equitable society. Very little research thus far, however, has directly considered how to better support diversity within collaborative video game design work.

I identified three concrete areas to study diversity within this field (understanding the structure of organizations, understanding collaborative work tool selection and use, and broadening the participation of underrepresented and marginalized groups) and developed three corresponding research questions. I addressed these questions by employing qualitative methods of multi-sited ethnography, digital ethnography, and modified grounded theory. I conducted 20 semi-structured interviews with game designers in different job roles within 19 different organizations; these interviews drew out instances related to diversity in participants' daily practices and experiences. I then analyzed all interview data using an iterative process of thematic analysis, guided by my modified grounded theory approach.

I inductively developed a list of salient structural features of participants' video game design organizations that is directly based on their discussions, including: size, task division and allocation, coordination, decision making, and recruitment and hiring. I additionally developed a list of significant rationales for how and/or why particular tools were selected, including: fitting an existing workflow; size; cost; the influence of upper management; ubiquity or industry standard; ease of use; and familiarity with the tool. Both of these ontologies can be used to examine specific effects of diversity within an organization and to suggest changes accordingly.

In addition to these conceptual contributions, I generated concrete recommendations that can be used to support the inclusion of underrepresented and marginalized groups within video game design organizations; these suggestions emphasize a need to place diverse people in diverse positions within an organization and to overcome the hiring conundrum. The conceptual and practical contributions of this dissertation can therefore positively impact diverse stakeholders within the video game industry and related research fields.

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Chapter 1: Introduction

We all see the world from different perspectives; these perspectives shape everything from our usual work routines to our entertainment choices. Some people's work is to produce entertainment for others, thus bringing their perspectives into the homes and the hands of diverse people around the world. With 67% of households in the U.S. today in possession of a device that is used to play video games (The Entertainment Software Association, 2017), the video game industry is one of the most significant sites for both producing and using Information and Communication Technologies (ICTs). In 2016 alone, U.S. consumers spent $30.4 billion on the video game industry overall (The Entertainment Software Association, 2017), with some recent video game releases achieving higher-grossing launches than any other form of entertainment media in history (Kain, 2013).

Such incredibly successful engagement rates indicate that video games can and do appeal to diverse individuals, in addition to creating a significant and increasing need for workers within this area. At the same time, the video game design[1] industry remains strikingly non-diverse—according to recent surveys, 74% of the overall industry is male and 68% is white[2] (International Game Developers Association, 2018). Many industry leaders, researchers, and players continue to argue that diverse representation in games matters both for the health of the industry and for an equitable society (Gray & Leonard,

[1] While the phrase "video game development" is frequently used instead of "video game design," I have chosen to use "design" throughout this research. I personally feel that the word "design" captures more of the creative nature of this work and is more inclusive of the range of job roles involved in a video game project, especially to an outside audience. However, many of the participants in this study (and others within the field) refer to this same overall process as "development" or "dev," and themselves as "developers" or "devs."

[2] Note that these statistics are inconsistent with the 2016 U.S. census data of the general population, in which 49% of respondents identified as male and 61% identified as white (International Game Developers Association, 2018).

2018; Williams, Martins, Consalvo, & Ivory, 2009), with recently-surveyed industry professionals feeling that a focus on "more diversity in game content" is the second-most important strategy (after "advancement in game design") to ensure future growth and success for the industry (International Game Developers Association, 2018). Some large video game design organizations have even begun polling their players and listening to their concerns about increasing inclusion; the company Electronic Arts recently concluded that 56% of their U.S. players feel it is "important" for "gaming companies/studios to make their games more inclusive to diverse audiences" (Electronic Arts, 2019). Only 42% of game design professionals themselves, however, feel that the industry itself had increased in diversity over the past two years (International Game Developers Association, 2018).

1.1: MOTIVATION

Scholars argue that diversity in a video game design work team affects both the work process and the end products themselves (Gray & Leonard, 2018), with workplace and organizational factors also playing an important role in fostering that diversity (Johnson, 2013). Accordingly, diverse representation in games can only be created in an "environment where people feel safe to share their different perspectives," in addition to supporting demographic workforce diversity (Kemps, 2015, para. 16). Yet while 84% of professionals currently feel that diversity is important in the game industry, only 33% feel that there is currently "equal treatment and opportunity for all in the game industry" (International Game Developers Association, 2018, p. 13). Among professionals whose organizations have some form of diversity or equality policies, only 56% feel that these policies are adequately enforced, and another 34% are not sure (2018, p. 13).

To understand how to create a work environment that can better support this desired diversity, more research is needed to address the specific needs of diverse individuals within this highly-collaborative form of digital design and computer-supported cooperative work (CSCW). In recent years, research into the general area of video game studies has productively examined a number of valuable aspects related to game design, evaluation, and play. Yet, as Koleva et al. note, a stark "paucity in the literature of studies of actual game development" remains (2015, p. 141). As the field continues to expand, understanding this specific type of work and the experiences of individuals within the field will only become more important.

Unfortunately, despite decades of criticism and concern, the technology workforce in the U.S. still employs underrepresented and marginalized groups at a disparate rate. According to one recent study, African American and Latino workers made up 29% of the general workforce population in 2014, but only 15% of the computing workforce—a percentage that had remained static over the previous 14 years, despite the groups' increase (up from 24%) within the general workforce population (Change the Equation, 2015). Although many researchers and several key initiatives have examined multiple reasons for underrepresentation and have offered some actionable suggestions, such demographic discrepancies continue to affect both the Science, Technology, Engineering, and Math (STEM) educational system and the workforces that it feeds into (Aspray, 2016b).

Video game design education and work is certainly no exception to these same issues (Cunningham, 2016). Individuals from underrepresented groups have continually struggled to be accepted into the field of video game design work and the larger culture surrounding video games (Cunningham, 2016; Gray & Leonard, 2018; Harvey & Shepherd, 2016). Although some progress into greater workforce representation has been

made (Hepler, 2016), underrepresented and marginalized groups and individuals still face a lack of organizational support (Johnson, 2013) and must constantly confront the cultural backlash against their presence—as seen with the recent "Gamergate" campaign (Gray & Leonard, 2018; Todd, 2015). Simultaneously, multiple stakeholder groups—including game players, game designers, and critical theorists—have increasingly called for greater diversity and diverse representation within video games themselves (Electronic Arts, 2019; Gray & Leonard, 2018; "I Need Diverse Games," 2016).

By better understanding different forms of diversity and their impacts in relation to ICT development, education, and employment, I intend to better support inclusion within the work of both current and future practitioners in these areas. Through this dissertation, I also hope to provide guidance more broadly on how work teams can acknowledge the differences within the various aspects of our lives while still working together to produce successful results. Such guidance relies on better understanding the role that ICTs can play in navigating forms of diversity within collaborative digital design and information technology work such as video game design—especially as ICTs are increasingly both crucial work facilitation tools and end products in themselves. In doing so, I argue that we must also confront the tension that exists between individuals' agency to engage with diversity and the relationship of diversity to the larger structures within which individuals are embedded.

1.2: Structure and Agency Within Information Work Environments

Western social scientists and philosophers have been interrogating the boundaries between the influence of larger social structures and the sphere of individual agency for hundreds of years (Bourdieu, 1977, 1989; Giddens, 1979, 1984; Hurrelmann, 1988). Today, organizational studies and information systems (IS) researchers attempt to

reconcile the purity of true structuralism (and other such theories wherein human action and interaction is primarily or completely shaped by the social structures that shape modern human life) with some degree of independent human capability to think and/or act that is not pre-determined by the social structures into which an individual human is inevitably born.

The increasing proliferation of ICTs has only deepened these discussions regarding structure and agency into new areas. As Fleischmann argues, ICTs have a particular ability to make the structures within society (including the very structures that may be utilizing those technologies) more "rigid and visible" in many ways, such as "the ability with most graphic design programs to easily make an organizational chart that makes static and visible an existing but perhaps previously unspoken hierarchy" (2014, p. 24). Accordingly, ICTs have a great capability to reinforce the influence of larger structures within the lives of human groups and individuals in many ways, including: using ICTs to monitor and reinforce the power of a larger social structure, including governments (Fleischmann, 2014); prescribing not only the use of certain tools, but also the ways in which those tools may be used within an organizational structure (Bouwman, 2005); or even using specific technologically-mediated communication styles to either emphasize or obfuscate power hierarchies within work teams (Leonardi, Neeley, & Gerber, 2011).

At the same time, ICTs have also offered profound opportunities for individuals and groups to assert their own agency and identity. For example, diverse young people may find that ICTs offer new opportunities to safely investigate their identities and to safeguard their mental and/or physical health (Wyn, Cuervo, Woodman, & Stokes, 2005). ICTs may also allow women in traditionally underprivileged positions within a social structure to assert their agency by making "new spaces for themselves and others to live

in, think in and work in," including public spaces "at the household, local, national, and international levels" (Buskens & Webb, 2009, p. 6). In particular, the introduction of ICTs into the workplace has undeniably had profound effects on individual experiences both within the workplace and in personal (non-work-specific) life—these changes are not necessarily "good" or "bad," but rather produce complex interactions (Hoonakker, 2014).

The world of collaborative video game design work is, in many ways, an excellent example of the tensions between agency and structure within a contemporary information work environment. Video game designers both create a "product" that is itself a complex ICT and must also inherently use several different ICTs to create that product. Additionally, the nature of collaborative creative and/or design work itself represents a three-part tension between working within the structure of the group, working with the ICTs needed to complete the work, and expressing individual agency and creative identity (Panourgias, Nandhakumar, & Scarbrough, 2014).

Previous authors have approached this tension more generally within the world of ICTs and information organizations, although relatively few have discussed it directly in relation to video game design work.[3] In particular, Mutch (2010, 2013) extends previous theories into the field of IS research to study the role of both structure and agency for ICT usage within organizations. While doing so, Mutch (2010) is also very attentive to calls to focus in more detail on the actual forms, roles, and scope that ICTs take within an organization (e.g., Orlikowski, 1992, 2000; Orlikowski & Iacono, 2001). Additionally, many IS researchers use iterations of structuration theory, such as the "structural model

[3] Johnson (2013) considers issues related to gender diversity and organizational culture/structure in a video game design company and touches on similar ideas, drawing specifically from Bourdieu's (1977, 1989) framework of the "field" and "habitus." Panourgias et al. (2014) also examine similar ideas during their discussion of creative agency within video game design work, although they do not discuss this tension specifically in relation to diversity. I discuss both papers in more detail in Chapter 2.

of technology" (Orlikowski, 1992, 2000; Orlikowski & Robey, 1991) and "adaptive structuration theory" (DeSanctis & Poole, 1994; Poole & DeSanctis, 1990).

These perspectives are useful for considering how overlapping social and technical systems—or socio-technical systems, as they are called in the field of Social Informatics—influence the boundaries of structure and agency within information technology or digitally-creative organizations (Kling, 2000, 2007). For the purposes of this research, I consider "structure" more loosely as reflecting a wide range of sociotechnical systems that may shape (and to varying extents, define) the experiences of an individual within the field of collaborative video game design work, including: the common educational system and set of standards that typically prepares future workers for working in an information technology field; the set of rules and guidelines that a work organization might enforce as a condition of continued employment (or engagement) in the work; or a set of cultural norms within a group.[4] In considering "agency," I will look at issues such as: personal expressions of identity within a work group or organization; an individual's ability to inform and shape organizational decisions (including decisions that become structural for that organization); or moments of enacting individual creativity or expression through the personalized use or selection of ICT work tools. Each of these considerations provides an opportunity to apply the lens of diversity to understanding how structure and agency mutually shape each other.

1.3: DEFINING "DIVERSITY"

Perhaps the most difficult problem to tackle when looking at diversity in collaborative video game design work is to define the very lens which I propose to adopt:

[4] Each of these types of structure may or may not reflect larger versions of these structures within U.S. society more generally.

diversity itself. Although many of the other terms and concepts that I address here can be difficult to pin down exactly between literatures or even individuals, "diversity" is a particularly and peculiarly slippery term. Diversity is simultaneously both an intensely personal concept and an operationalized institutional definition, particularly within the United States. Therefore, I first address the concept of diversity itself, including by framing it within theoretical concepts of understanding diverse identities and of marginal and underrepresented identity group construction. Next, I set the stage for how diversity has previously been understood specifically within the workplace context within the U.S.

1.3.1: Theoretical Frameworks for Understanding Diversity

There are many theoretical frameworks for conceptualizing diversity at the individual, group, and societal level. Perhaps one of the most basic ways of understanding what diversity is—and a particularly relevant approach for the investigative nature of this research—is the simple concept of recognizing a moment of difference. This experience of difference[5] creates an awareness of otherness, either in a kind of self-awareness of being different or in the identification of difference within another person or in a situation.

Such otherness may be psychological, philosophical and/or ontological, political, or cultural (Miller, 2008). In contemporary U.S. society, however, it is impossible to discuss diversity without addressing the structural and systemic biases that affect certain demographic populations. Demographic identity groups based on markers such as race, gender, class, disability status, sexual orientation or identity, age, and ethnicity are frequently at the heart of discussions about diversity (Wood, 2003).

[5] Such "difference" may be experienced as anything from a temporary instance to a constant marker of identity.

In contrast to a strict demographic model, some theorists take an almost opposite (and more abstract) approach to defining diversity within society. For example, Page outlines four "frameworks for modeling diversity," collectively called "the diverse toolbox," for understanding how diversity may be represented within a group: diverse perspectives ("ways of representing situations and problems"), diverse interpretations ("ways of categorizing or partitioning perspectives"), diverse heuristics ("ways of generating solutions to problems"), and diverse predictive models ("ways of inferring cause and effect") (2007, p. 7). Although Page's "diverse toolbox" may also be too limiting or overly simplistic, it does provide some important gestures for moving beyond purely demographic ways of defining diversity.

In addition to concepts such as "diverse perspectives," discussions of diversity within the United States also inevitably include issues of multiculturalism.[6] For example, the International Federation of Library Associations and Institutions (IFLA) currently defines multiculturalism as "the co-existence of diverse cultures, where culture includes racial, religious, or cultural groups and is manifested in customary behaviours, cultural assumptions and values, patterns of thinking, and communicative styles" (Chu, 2005, p. 1). Such definitions—especially when made publicly available—operate not only to provide insight into an organization's operationalization of diversity, but also as a kind of aspirational goal for informing other groups' beliefs and practices.

Accordingly, definitions of diversity and of identifying diverse people (particularly underrepresented groups and marginalized identities) are often an important step for supporting or even protecting such people. Group-based "identity politics" can have real power for achieving significant improvements for underrepresented or

[6] Although the term "multicultural" has somewhat waned in preference of the more general term of "diversity," the concept is still important and remains a significant type of diversity.

marginalized groups; however, that same power is often defined as much by who is *excluded* by strict identity boundaries as it is by who is included (Ericson, 2011). In this way, clearly identifying and labelling "diversity" can simultaneously highlight new perspectives and groups of people while erasing others.

Additionally, intersectional feminist and critical race theory argues that identities within an individual or a group are overlapping; separate forms of diversity and diverse identities cannot easily be analyzed independently of each other or outside of the complete social experience and therefore present significant methodological challenges and choices (Bilge, 2010; Bowleg, 2008; Crenshaw, 1989). Although previous researchers have applied an intersectional approach to studying issues of diversity policies in the workforce (e.g., Bagilhole, 2010), Marfelt (2016) highlights four tensions in applying intersectional approaches within the field.[7] In response to these limitations, Marfelt proposes a new methodology for conducting critical diversity research that encourages a reassessment of common *a priori* assumptions about diverse identities in order to open up this area of research "for explorations beyond conventional identity theorizations," but strongly discourages giving primacy to the concept of oppression while doing so (2016, p. 31).

In addition to being inherently interlinked, diverse identities are also fluid; they change over time and in response to a variety of external and internal factors, including shifts within different aspects of a single individual's intersectional identity (Marfelt, 2016). Moreover, concepts of identity can "hybridize" seemingly conflicting ideas and positions: this idea is exemplified by Anzaldúa's (1999) concept of the "*mestiza*" identity that can contain both the oppressor and the oppressed, or Haraway's (1991) construction

[7] These are: "a tension between looking at or beyond oppression; a tension between structural-oriented and process-oriented perspectives; an apparent incommensurability among the macro, meso, and micro levels of analysis; and a lack of coherent methodology" (Marfelt, 2016, p. 31).

of the "cyborg" identity that ironically combines classic Western dualisms such as man and woman, or nature and high technology. In particular, Haraway's (1991, 1997) concept of the cyborg brings important objects from the world of information work—namely, ICTs—into the center of discussions about diversity, identity, and group experience.

Feminist Science and Technology Studies (STS) research has additionally looked at diverse people's experiences with ICTs, including ways of expressing and navigating identity using digital technology (Balka, Green, & Henwood, 2009), and critically analyzing how technical and digital objects are constructed for diverse users (Berg & Lie, 1995; Oudshoorn, Rommes, & Stienstra, 2004). Feminist STS has engaged both with considering diversity as it applies to sociotechnical systems and in developing critical theoretical perspectives for understanding different forms of diversity (Bauchspies & Bellacasa, 2009; Landström, 2007; Schnabel, 2014), such as feminist standpoint epistemologies (Campbell, 2009). In particular, Haraway's (1988) conceptualization of "situated knowledges"—whereby a researcher should *start* by viewing a system of diverse perspectives from less privileged members' perspective—offers an important alternative to most organizational models for understanding diversity and its effects within a group, including within an information work environment.

1.3.2: Definitions of Diversity Within the Workplace

Unlike some of the more abstract approaches to conceptualizing diversity—such as the *mestiza* or the cyborg—examinations of diversity within workforce research are often strictly defined by the demographic (and "countable") conceptualization of diversity. In the U.S., this focus is primarily due to the unique history of progressive legislation intended to guarantee equitable representation across the workforce, beginning

with the Civil Rights movement of the 1960s.[8] Saggese argues that "under the institutional rubric of diversity, the emphasis on demographic (e.g., race, gender) compliance and assessment does not necessarily account for the complexity of what [some artists and activists] have theorized as difference" (2016, p. 72).[9] For better or worse, however, the specific categories of identity covered by governmental mandate shape most of the discourse around diversity within the workplace.

Since the implementation of these mandates, diversity within the workforce has been examined from a range of theoretical perspectives (Byrd & Scott, 2014) and through topics such as demographic differences (Tsui & Gutek, 1999), constructing identities at work (Angouri & Marra, 2011), and how to profit from diversity (Moss, 2010). Many studies have looked specifically at how team members react to perceived diversity on their team (Shemla, Meyer, Greer, & Jehn, 2016) and how to foster diversity within work teams (Jackson & Ruderman, 1995), while other researchers have examined the extent to which diversity itself must be an individually-held, group-held, or even professionally-held value in order to effectively support workplace diversity (Weissinger, 2003).

In particular, the field of organization studies has looked at diversity from a variety of theoretical and methodological angles. Some research has looked at how

[8] Although President John F. Kennedy had issued an earlier governmental mandate in 1961 that was directed at U.S. Government employment, Title VII of the Civil Rights Act of 1964 is generally considered to be the first major legislation to guarantee greater equality within the workforce (Byrd & Scott, 2014). Title VII originally forbid discrimination specifically on the basis of race, color, religion, and nation origin, but has been expanded through subsequent legislation to explicitly prohibit pregnancy, age, and disability discrimination (Byrd & Scott, 2014). Additionally, judicial precedent (primarily lawsuits) has established that sexual harassment and discrimination on the basis of gender identity and transgender status—and potentially sexual orientation—are also covered by Title VII (Byrd & Scott, 2014). These protections were further expanded into (in some cases) the concepts of "quotas" and of "Affirmative Action" (or active hiring and inclusion of specific underrepresented and minority groups) (Byrd & Scott, 2014).

[9] We should also remember that Crenshaw's (1989) groundbreaking work (which partially adapted earlier concepts from Black Feminist and Womanist theory (e.g., Lorde, 1984)) into intersectional approaches to understanding identity was written specifically in reaction to antidiscrimination policies and was itself published in a law journal.

diversity ideologies function within the workplace (Thomas, Plaut, & Tran, 2014) or at how to develop diverse positive identities within organizations (Roberts & Dutton, 2009). Many authors approach the topic of diversity within organizations more specifically from the area of organizational culture (Aaltio-Marjosola & Mills, 2002) or from the perspective of organizational change (Bond, 2007). Significantly, within the field of organization studies, diversity is commonly discussed from both descriptive or critical positions (Herring & Henderson, 2014) and from more overtly action-oriented positions (Otten, Zee, & Brewer, 2014).

1.3.3: Why Diversity as a Lens?

While some theorists take an ethical approach to understanding and supporting diversity within the workforce (Hopkins, 1997), most other arguments tend to emphasize either practical benefits to the work team or conformance to legal guidelines for representation within the U.S. For example, many initiatives target increasing inclusion of underrepresented and marginalized groups within STEM, especially information technology work.[10] Few of these programs have looked specifically at video game design work, despite it being a quickly-growing and significant field in the U.S. economy and workforce (Entertainment Software Association, 2014).

From a more practical angle, organizations have an increasing interest in maximizing diversity in order to increase creativity within collaborative group work (Page, 2007), as well as in better supporting diverse work styles in order to increase productivity—and profits—using collaborative teams (Moss, 2010). There is also an increasing need to effectively support collaborative work among diverse individuals and

[10] In the U.S., this particularly includes the NSF broadening participation programs and groups such as the National Center for Women & Information Technology (NCWIT).

teams working within the model of networked business organizations (Camarinha-Matos & Afsarmanesh, 2004).

Finally, people simply are diverse: any attempt to understand the work that people do within organizations and society must, at some point, acknowledge and attempt to describe that diversity. We should balance our description of that diversity within both a more structural and a more individual perspective, while being sensitive to how mixtures of diverse identities and perspectives will both impact and be impacted by the work done in an organization. I propose that we should therefore consider some of the more abstract frameworks for conceptualizing diversity together with operationalized definitions of diversity found within the workplace by acknowledging the tension between these two approaches—a tension that mirrors the one between structure and agency.

Utilizing a formal, more structural definition of diversity can be valuable—and sometimes even *necessary*—for researchers to describe and discuss the lived experiences of individuals and groups as they operate within an organization. At the same time, we must also afford space for individuals to create, find, and express their own different forms and moments of diversity within organizations, even if that diversity may be somewhat fluid and is not always easily classified in advance of experiencing it. In this way, researchers interested in studying diversity within collaborative video game design work might approach the field with a certain set of concepts of diversity (informed by literature and previously-operationalized definitions of the term within the workplace), while still expecting to find unexpected and complex forms of diversity within their participants' expressions and experiences. Accordingly, I contextualize and explain my research approach within this framework throughout this dissertation.

1.4: Dissertation Overview

In the following chapters, I describe my approach to using diversity as an important lens through which to study different collaborative work processes within video game design and then discuss my findings. First, in Chapter 2 (Background), I review previous research on diversity and video games to contextualize this dissertation research. I then use my review to motivate three areas of focus (participation of underrepresented and marginalized groups, the structure of organizations, and collaborative work tool selection and use) for considering diversity within this field and explain what an examination of each of these areas contributes to this research. Lastly, I use the context given within the chapter to identify and discuss the three research questions informing my dissertation.

In Chapter 3 (Methods), I outline my qualitative research approach. I begin with a discussion of my methodological orientation, including identifying the primary methodologies (multi-sited ethnography, digital ethnography, and a modified grounded theory) that have shaped this research. Next, I describe my participant demographics and the sampling strategies that I employed to recruit participants from the collaborative video game design field. I then outline the specific data collection and analysis strategies that I used to investigate my research questions, primarily using in-depth, semi-structured interviews to examine the three main areas that I describe in Chapter 2. Finally, I conclude this chapter by describing my approach to ensuring data saturation and validity.

The next three chapters address some significant findings related to each of my three research questions. Chapter 4 (Organizational Structure and Diversity) discusses my findings related to RQ1, which focuses on understanding the relationship between organizational structure and diversity within collaborative video game design work. First, I give an overview of participants' video game design organizations. I then discuss

significant features of the organizational structures described by my participants, as well as how participants relate those features to aspects of diversity within their work. The majority of this chapter focuses on discussing each structural feature in detail.

Next, Chapter 5 (Collaborative Work Tools and Diversity) discusses significant findings related to RQ2, which focuses on understanding the relationship between the use of collaborative work tools and diversity within the video game design process. In this chapter, I summarize the types of collaborative tools that participants use, as well as identifying some significant differences in tool selection and use between organizations of different structural features. I then discuss participants' understandings of the relationship between collaborative tools and diversity in their work, particularly focusing on the challenge of surfacing this relationship during interviews. Finally, I discuss a few key themes and examples of where participants identified diversity as potentially relevant to collaborative tool selection and use within their organizations.

Building on and extending the findings in Chapters 4 and 5, Chapter 6 (Promoting Inclusion of Traditionally Underrepresented and Marginalized Groups) discusses my findings related to RQ3 and focuses more closely on the experiences of participants from underrepresented and marginalized groups. I first discuss how participants described "diversity," particularly in terms of the demographics and identities of themselves and other members of their organizations. I then discuss why participants overwhelmingly feel that supporting diversity within video game design organizations is important, as well as two significant themes that participants discussed in terms of including more diverse members within their organization. Lastly, I discuss several examples that can be used to inform suggestions for better supporting inclusion, as well as amplifying direct recommendations from my participants. These recommendations are organized into themes for the remaining sections of the chapter and cover issues of inclusion that can

arise both before and after members from underrepresented and marginalized groups enter a video game design organization.

After presenting these findings in relation to each of my research questions, Chapter 7 (Discussion) synthesizes overarching themes that address my findings from multiple research questions. I additionally return to the previous research that I discussed in Chapter 2 in order to show how this research enhances our understanding of the relationship of diversity to collaborative video game design work. I then finish this chapter with discussing some of the limitations of this study.

Finally, in Chapter 8 (Conclusion) I conclude by discussing significant implications of this research for both theory development and practice in the area of collaborative video game design, including giving a summary of the recommendations for promoting inclusion that I discussed in Chapter 6. I then indicate some potential future directions for this work.

In this chapter, I have discussed the motivation for this research and contextualized my own understanding of the tension between structure and agency within an information work context. I have additionally examined different conceptualizations of and approaches to studying diversity, as well as discussing my use of diversity as lens through which to understand collaborative video game design work. In the next chapter, I will provide further background for this dissertation through discussing relevant previous research the intersection of diversity and video games and then in three key areas related to diversity within this field: participation of underrepresented and marginalized groups, the structure of organizations, and collaborative work tool selection and use.

Chapter 2: Background

In this chapter, I review literature in several fields to understand the role of diversity in collaborative video game design work. First, I examine previous research at the intersection of diversity and video games to contextualize my dissertation research. I then use this review to motivate three particular areas of focus for considering diversity within the field of collaborative video game design: participation of underrepresented and marginalized groups, the structure of organizations, and collaborative work tool selection and use. Next, I explain in detail what an examination of each of these areas contributes to this dissertation by identifying needs for further research in each area.

During this examination, I focus primarily on considering how analyses of diversity can be applied at the organizational level. At the same time, I also include starting points for understanding concepts of diversity and diverse perspectives at both the group and individual level. Accordingly, I have structured my analysis throughout these sections of the chapter ("Participation of Underrepresented and Marginalized Groups," "The Structure of Organizations," and "Collaborative Work Tool Selection and Use") to consciously highlight the tension between structure and agency inherent to any discussion of identity as it functions within a larger system.

After my review of relevant research and theory, I briefly summarize the context of this dissertation research. I then identify and discuss three research questions that are informed by my discussion of previous research within this chapter. Finally, I explain in depth how these three research questions informed my dissertation research.

2.1: Previous Research on Diversity and Video Games

Much of the previous research on diversity in the general area of video game studies has focused on the experiences of users/players of games and on diverse

representation within games themselves rather than on diversity within the workforce. Previous research has looked at, for example, the experiences of people of color (e.g., Shaw, 2012) and of female (e.g., Fox & Tang, 2016), older (e.g., R. Schell, Hausknecht, Zhang, & Kaufman, 2016) and LGBTQIA+ (e.g., Pulos, 2013) individuals playing video games, especially in an online environment.

Several studies have looked at forms of diverse representation within video games such as gender (e.g., Downs & Smith, 2009), sexual orientation and identity (e.g., Shaw, 2009), race/ethnicity (e.g., McArthur & Jenson, 2014), and cognitive disability or differences (e.g., Hiniker, Daniels, & Williamson, 2013). Some researchers have analyzed or even designed video games specifically on the topic of diversity itself (e.g., Choudhury, 2014) or on how to use games to create a more equitable society (e.g., Burak & Parker, 2017; Gray & Leonard, 2018). Other researchers have additionally considered the potential of applying feminist or critical race perspectives to understanding the relationship between diverse representation and gaming (e.g., Gray & Leonard, 2018; Gray, Voorhees, & Vossen, 2018).

Some previous research has also examined an intersection of diverse inclusion, video games, and education/learning (e.g., DiSalvo et al., 2011). This body of research also often develops and employs actual video games that are designed to teach diverse young students about computer programming or technology design work (e.g., Ash, 2009; DiSalvo et al., 2013). For example, the Skins project (Lameman, Lewis, & Fragnito, 2010) built a thoughtful and novel curriculum that allowed Indigenous youth to design their own games, with a focus on allowing them to reflect on their own experiences of culturally-embedded stories.

Although diversity within video games and video game design education is certainly related to video game design work (Cunningham, 2016), very little of the

existing research within the overlapping fields of diversity, video games, and collaborative digital work has focused specifically on the day-to-day lived work experiences of people working within the field of video game design. There are a number of significant reasons why studying diversity within the current field of video game design work should be given greater attention, including to better support underrepresented individuals working within the field and to potentially inspire other diverse individuals to join the field (Cunningham, 2016; Hepler, 2016; Johnson, 2013).

Most published studies on game design work have taken the form of retrospective analyses of authors' personal experiences as game developers (e.g., Khaled & Ingram, 2012; Shirinian, 2011), often referred to as "postmortems." In their review of such game postmortems, Petrillo, Pimenta, Trindade, and Dietrich (2009) sought to identify common problems in the game development process and to consider any similarities and differences to well-known problems in traditional information systems development. They identified 15 emergent problems from their analysis of these postmortems: unrealistic scope, feature creep, cutting features during development, problems in the design phase, delays, technological problems, crunch time, lack of documentation, communication problems, tool problems, test problems, team building, number of defects, loss of professionals, and over budget (Petrillo et al., 2009). They particularly highlight the problem of communication among teams as being specific to the game design industry, arguing that while "the team in traditional software engineering is usually relatively homogeneous," the video game design industry is multidisciplinary and "attracts people with a variety of profiles such as plastic artists, musicians, scriptwriters, and software engineers" (Petrillo et al., 2009). However, they do not identify diversity specifically as being related to any of these problems.

Only a few research studies have looked directly at how the "actual work of games development is accomplished," as opposed to informal postmortems (Koleva et al., 2015, p.149). Altizer et al. argue that the most significant challenge to collaboration during the process of serious games[11] development "lies in the need to develop a shared understanding," leading them to develop a participatory design method that can allow diverse stakeholders who have "different perspectives and use different vocabularies" to work together to produce "a single shared knowledge system" (2017, p. 406). Similarly, Tran and Biddle's (2009) ethnographic analysis of the day-to-day activity of a team responsible for designing and developing game content revealed that the success of innovative design within a culture of collaboration is highly dependent on the quality of interpersonal relationships within the team.

In particular, Koleva et al. illuminate key features of the workflow and collaboration process of multiple game design teams and examine issues within those workflow and collaboration processes. They particularly highlight the importance of **collaboration tools** in this work and make several recommendations for design based on their findings, including that such tools support "a variety of situated interactions and the relevance of features for discussion" and enable "interruptability and flexible communication and sharing practices" (2015, p. 149). Similarly, while Panourgias et al. (2014) deeply examine the relationship of game developers' collaborative workflow and their reliance on specific ICTs to their generation of creative ideas for imagined novel game-playing experiences, their model of this process does not discuss how creativity itself may be related to diversity.

[11] "Serious games" here refers to games with "additional purposes to entertainment (e.g. serious games)" where "such games must accomplish instrumental goals (e.g. facilitate learning) as well as experiential ones (e.g. fun)" (Altizer et al., 2017, p. 406).

Johnson specifically analyzes the effects of organizational culture on encouraging diversity (both within the work team and in the final design product) and argues that changing the organizational conditions on a structural level can better allow for gender diversity and individual agency and that, furthermore, employing "other types of diverse **organizational structures** can impact the role of video games for the broader culture" (2013, p. 136). Johnson concludes by noting that while "lessons learned from analyzing the boundary divisions at one studio can be instructive in thinking of ways to make game studios open to more diverse perspectives and influences," the nature of providing a detailed analysis of a single studio creates certain obvious uncertainties and limitations—therefore, more research on game production is needed "so that we can begin to compare different organizational structures; studios of different sizes; studios in different regions of the world, independent, 'indie' and publisher-owned studios; and studios that are longstanding or emergent" (2013, p. 156). As such, Johnson's study of how commercial video game studios "erect boundaries through the organization of work that tends to discourage the production of a diverse range of games" (2013, p. 136) is among the only previous research that combines the specific elements of diversity and collaborative digital design work within the particular context of video game design organizations.

Finally, O'Donnell's groundbreaking research on "typical developers and [their] work practice" that aims to better understand "why they work in the ways they do" (2014, p. 10) also highlights features of video game design related to organization structure and collaborative tool use. Drawing on concepts of the assemblage (Deleuze & Guattari, 1987) and (actor-)network theory (Latour, 2005; Law, 1987), O'Donnell also highlights important tensions between the creative process of game design and the larger social structures that surround it. By focusing on interviews primarily with developers from large, well-established studios, however, O'Donnell (2014) may miss some of the

potentially significant features of smaller organizations, as well as the type of comparisons that Johnson (2013) suggests. Additionally, while O'Donnell (2014) makes significant contributions towards understanding the everyday practices of videogame developers within these contexts, the book does not cover issues related to diversity and inclusion within this work in any significant depth—especially as related to organization structures and collaborative tool usage. O'Donnell specifically acknowledges "a lack of insight into why […] the [gender] demographics of game develops have remained relatively static and continue to be significantly lower than those who play games" and identifies a lack of focus on the issue during interviews as one reason why most female participants "did not reflect on their gendered position," as well as potentially focusing "too myopically on specific corporate sites throughout the research" (2014, p. 276). In response to this "failing" of the text, O'Donnell argues that additional future research of women game developers "is critical" in order to "better understand what compels and constrains their progress in the industry" (2014, p. 276).

It is important to acknowledge that while O'Donnell does here mention "recent controversies" involving Twitter hashtags and "vitriolic comments" that women developers face as being "representative of the underlying issue" (2014, p. 276), the data collection (and preparation for publication) of this research took place before the outbreak of the "Gamergate" harassment campaign. "Gamergate" is a movement started in 2014 that was ostensibly about supporting ethics in games journalism but served as a flashpoint for many ongoing issues in the video gaming community (Braithwaite, 2016; Todd, 2015) and in online harassment discourses more broadly (Adams, 2018; Bezio, 2018; Shepherd, Harvey, Jordan, Srauy, & Miltner, 2015).[12] Throughout the next few

[12] While Gamergate began with the harassment of a few specific white women, women of color, and men of color, the movement snowballed into a critique online and through social media of what was and wasn't "real" video game design or content, and who was and wasn't considered acceptable game designers. These

years, the Gamergate movement became almost universally relevant and prescient throughout every form of game design;[13] individuals from the smallest independent game design organizations to the largest corporate studios were targeted for various forms of harassment and even large companies publicly responded to pressure from both sides of the Gamergate controversy (Kamen, 2015; Takahashi, 2014; Wilde, 2014; Wingfield, 2017). Both game designers and game players alike were often compelled to address their own opinions towards the movement and to deal with the opinions of those closest in their communities. Some excellent critical writing and research has been recently published that directly confronts the sexism, racism, homophobia, transphobia, xenophobia, and ableism that Gamergate came to represent within gaming and the game design industry (Bezio, 2018; Chatzakou et al., 2017; Evans & Janish, 2015; Mortensen, 2018), particularly as written from the perspectives of marginalized and underrepresented members of these communities (DePass, 2018; Gray & Leonard, 2018; Hepler, 2016). Very little of this research, however, has focused on conducting a strategic look at specific factors within the everyday process of collaborative video game design work that might better support inclusion within the field in the post-Gamergate landscape.

Accordingly, previous research in this area indicates that more studies of video game design work and game designers' experiences that specifically investigate the relationships between the structure of game design organizations, the collaborative tools that these organizations use, and the role of diversity are necessary in order to understand this form of information work more fully.

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discussions were often incredibly heated (and offensive), leading to some of the most vitriolic, organized online harassment in recent years, with this vitriol being particularly aimed at game designers/developers from marginalized or underrepresented groups or those who were producing games that focused on or were inclusive of a greater diversity of representation. See, in particular, Quinn's (2017) personal memoir and analysis for an on-the-ground history.

[13] I discuss the effects of Gamergate on the participants of this research in more detail in Chapter 6.

2.2: Participation of Underrepresented and Marginalized Groups

As I have described in Chapter 1, any examination of diversity within this area of work must also consider the participation of individuals from demographically underrepresented and marginalized groups within the field. Research on workforce diversity has covered issues both in education and in various fields, including information technology industries (Aspray, 2016b).[14] Although many researchers and several key initiatives[15] have examined various reasons for underrepresentation and have offered some actionable suggestions, these demographic discrepancies continue to affect both the STEM educational system and the workforces that it feeds into (Aspray, 2016b; Barjaktarovic, 2014).[16] The area of video game design education and work is certainly no exception to these same issues (Cunningham, 2016; DePass, 2018). Thus, in this section, I examine some areas where previous research has identified issues for diverse representation within information technology and STEM work fields, highlighting points of needed further research specifically within the field of collaborative video game design work.

2.2.1: Structural Bias Against Underrepresented Groups Within the STEM and Information Technology School-to-industry Pipeline

Much of the current literature on broadening diverse participation within the STEM disciplines considers the educational model to be a crucial part of shaping diversity within the STEM workforce (sometimes referred to as the "school-to-industry

[14] I am only focusing here on a tiny part of this literature in order to highlight a few examples of where a focus on diversity might provide fruitful research into the specific field of video game design work.
[15] Most notably within the National Science Foundation's Broadening Participation programs (see Aspray, 2016a).
[16] The problem of equal representation within STEM education and work fields is large enough that we may consider this bias to be a structural issue that (at least partially) exists beyond the agency of a few individuals or groups. Indeed, the problem of diversity in technology education and work has seemingly taken on a sort of mythical and unquestioned status—potentially scaring away underrepresented groups from these areas even before (or quickly after) joining them.

pipeline") (Aspray, 2016a). A lack of diversity within the educational system that produces STEM and information technology workers and researchers is undeniably a critical factor for diversity within those work fields.[17] Additionally, underrepresented and marginalized groups are failed by the educational "pipeline" through a lack of diversity in other, more subtle, ways (Barjaktarovic, 2014).

Very few STEM educational programs (including computer science) provide room for diverse cultural or psychological perspectives: most learning models[18] and academic research methodologies come from dominant Western cultures (L. T. Smith, 2012). Several authors have proposed alternate teaching examples and systems for computer science education (Barjaktarovic, 2012; Eglash, Bennett, O'Donnell, Jennings, & Cintorino, 2006; Eglash, Gilbert, & Foster, 2013; Scott, Sheridan, & Clark, 2015; Trentacosta & Kenney, 1997), while authors such as Roy (2015) have proposed ways to include diverse worldviews into library and information studies education.

Additionally, the use of certain forms of communication can be alienating to students—and future workers—for various cultural reasons (e.g., Howard, Curwen, Howard, & Colón-Muñiz, 2015) or because of disability-related issues (e.g., Aspray, 2016a). Even the systemic use of certain terminology and expressions can be confusing, offensive, or even harmful to diverse students and workers (e.g., Eglash, 2007).[19] We can follow such undermining practices into the information technology fields that this

[17] This particular lack of diversity is most obviously represented in the enormous discrepancies in demographics between unrepresented and marginalized groups when compared to their presence within the general population of the U.S.: groups such as Hispanic Americans, Black Americans, LGBTQIA+ Americans, Indigenous Americans, and even (despite getting the most attention from diversity initiatives) white female Americans continue to enroll in and graduate from programs in the STEM and information technology fields at significantly low rates (Aspray, 2016a).

[18] Including models and examples used both within and outside of the U.S.

[19] Barjaktarovic (2014) additionally gives the example terminologies of "'male and female connectors' in electrical engineering; 'master and slave servers' in IT; [and] 'FAQs' in computer science," which all carry (mostly unacknowledged) social implications beyond their surface usage within these fields (p. 4).

educational pipeline feeds into.[20] Even if a student is able to overcome such challenges while in school, they may find themselves continuing to face the same exact issues in the workplace.[21]

2.2.2: Experiences of Diverse Individuals Within the Information Technology and Digital Design Workforces

Similar structural biases hold for underrepresented groups when going into more entrepreneurial roles, including working in startups (Baron, Hannan, Hsu, & Koçak, 2007) or when trying to acquire capital for tech-related startups (Tinkler, Bunker Whittington, Ku, & Davies, 2015). Additionally, as Johnson discusses, larger video game design organizations may also "erect social boundaries through the networks of work organization that might also contribute to a discouragement of producing different kinds of game content" and that can limit personal expressions of diversity by the individuals making these games (2013, p. 139). Because many (although certainly not all) video game design work teams fall into either the large-scale organization model or the smaller "startup" model (see the cases in Hepler, 2016), such systemic organizational biases likely shape the experiences of underrepresented and marginalized groups long before individuals from these groups actually join a collaborative work team.

Once on a team, previous research has also found that relationships and network connections within organizations—especially entrepreneurial or startup groups—shape very different consequences (such as work roles and promotion opportunities) for group

[20] For example, the sponsoring of non-inclusive behaviors by technology companies, such as hiring lap dancers at official conferences (Barjaktarovic, 2014).

[21] If anything, such work organizations may be held even less accountable than educational systems for supporting or enabling such discouraging behaviors, particularly in comparison to federally-funded schools within the U.S. (who are more unilaterally subject to the enforcement of certain legal protections for underrepresented groups, such as Title IX of the Education Amendments Act of 1972). Title VII employment protections in the U.S., while being very important, also have several limitations of scope based on several factors, including organization size.

members based on factors such as gender, race, or national identity (Chen, Tan, & Tu, 2015; Thébaud, 2015). Several studies have shown that individuals from underrepresented groups within the information technology workforce often experience intense feelings of alienation or of being ignored—or even outright insulted—within their work teams (DePass, 2018; Misa, 2010). The small body of research into the experiences of individuals from underrepresented groups within video game design—focusing mainly on women—indicates that these individuals face similar workplace conditions and typically struggle to get their ideas and work recognized unless they are at a high level within their organization or found their own organization (Cunningham, 2016; DePass, 2018; Hepler, 2016).

Such struggles for recognition within the STEM and information technology workforces are often magnified by the presence of stereotypes within the field. Negative stereotypes of underrepresented groups affect individuals on both a personal (Latu, Mast, & Stewart, 2015) and a collective (Cohen & Garcia, 2005) level. Negative stereotypes can also particularly affect the long-term career development of members of underrepresented groups in STEM fields (van Veelen, Derks, & Endedijk, 2019). While some bias literacy efforts have been shown to be effective in STEM fields (Carnes et al., 2012), it is important to note that such diversity training and initiatives can create serious backlash and stereotype reinforcements in addition to generating positive outcomes (King, Dawson, Kravitz, & Gulick, 2012; Pietri et al., 2019). Accordingly, in response to negative personal experiences with discrimination and stereotyping, job seekers who strongly identify as members of an underrepresented or marginalized group "are more intent on pursuing employment with organizations deemed to value diversity because they feel that their salient identities are likely to be affirmed" (Avery et al., 2013, p. 175).

Despite such challenges, individuals within information technology and digital design organizations from underrepresented or marginalized groups still have some opportunities to share their personal perspectives and to affect those organizations, including in more positive ways. For example, Hepler's groundbreaking collection of 22 "intelligent, talented, hard-working, and opinionated" women's personal stories about working in the video game design field contains many instances of personal success, creative achievement, and even organizational change (2016, p. 2). Although all of the women profiled have had to overcome clear obstacles within the field due to their identity as women, many of them have been able to enact moments of transformation and agency within their work organizations—whether by speaking to managers about increasing diversity within a game, or by eventually becoming a project manager or CEO themselves (Hepler, 2016).

2.2.3: Needs for Future Research into the Participation of Underrepresented and Marginalized Groups in Video Game Design Work

Discussing diversity within this particular framework often creates some tension or reactional hostility, especially when individuals from non-protected groups feel that members of such underrepresented groups are being afforded "special" treatment or reward or that they themselves are personally being chastised or criticized for not supporting diversity (Antwi-Boasiako, 2008). Accordingly, any investigations of diversity within video game work must be sensitive to this context. Yet studying the participation of underrepresented groups and diverse individuals within collaborative video game design work need not be necessarily only about discovering the "bad" practices that are (either structurally or individually) harming such people; examining diversity within this area of work could also involve highlighting neutral or positive

aspects of diversity. For example, although previous research indicates that diverse teams create better and more original products (Page, 2007; Steele & Derven, 2015), little research has been done specifically on how such positive effects of diversity may (or may not) be represented within collaborative video game design work.

Additionally, as indicated by my review here, far more research has been done on the structural biases within the STEM educational system and the information technology work field than has looked at the effects of members from underrepresented/marginalized groups themselves within such organizations or has deeply analyzed their daily experiences of diversity within that work—especially in collaborative video game design. Although we may assume that the video game industry would experience similar issues related to workforce and organizational diversity, we can also expect these issues to manifest in different ways due to important differences in educational models and degree programs, in social capital systems inherent to this particular field, or in specific work organization models—which is exactly why more specific studies of diversity within the field of video game design work are necessary. I turn next to considering some of the ways in which we might better understand the role of diversity within video game design work as it is embedded in specific organizations.

2.3: The Structure of Organizations

The study of organizational structure focuses on the "formal and informal manner in which people, job tasks, and other organizational resources are configured and coordinated" (Kottke & Pelletier, 2017, p. 1143). There are many theories for understanding organizational structures, each with different types or models of organizations (see, for example, Galbraith, 2009; Hedberg, Dahlgren, Hansson, & Olve,

1997; Merton, 1968; Mintzberg, 1979; Spinuzzi, 2015).[22] Within the fields of information technology design, the "network" and the "bureaucratic" models are often seen as being especially significant (Baron, Burton, & Hannan, 1999; Johnson, 2013; Spinuzzi, 2008)—and, often, as being at odds. Baron, Burton, and Hannan's (1999) early "high-technology" organization models, for example, focus almost exclusively on different types of bureaucratic models. Other researchers propose that the very nature of information technology work[23] strongly inclines the structure of such organizations towards "all-edge adhocracies" and network-related models (Spinuzzi, 2008, 2015).

In contrast to applying such models, many authors have criticized the way that contemporary information technology organizational structures are even described or labeled. For example, Winter et al.'s neo-sociotechnical systems approach is intended to "de-containerize" the way that organizational boundaries and structures are depicted within IS research, in order to better explain the "flexibility in temporal precedence between infrastructure, work, and organization" within different types of overlapping work systems that have inherited properties from multiple different systems and organizations (2014, p. 264). Tracing and analyzing such legacies within organizations and their effect on the diverse individuals working within the group are a critical step towards better understanding various aspects of diversity within an organization.

[22] As it is beyond the scope of this paper to describe the entire history of the field, I only focus in this section on a few models and frameworks that are particularly relevant to the field of collaborative video game design work. Because very few studies other than Johnson (2013) have looked specifically at organizational structure within this specific form of information work, I also consider potential areas for considering diversity more generally within information technology work organizations.

[23] Especially the high level of collaboration between individuals at many different positions within and outside an organization, using shared collaborative work objects (Spinuzzi, 2008, 2015).

2.3.1: Salient Features of Organizational Structures

In order to contextualize this research, I briefly describe some salient features of organization structures that are particularly relevant to the organizations described by participants. This section is divided into sub-sections focusing on the significant features of: size, task division and allocation, coordination, decision making, and recruitment and hiring.

2.3.1.1: Size

While the size of an organization can defined by a number of different features,[24] the number of employees/members is one of the most common metrics (Kottke & Pelletier, 2017). Kottke and Pelletier assert that the "number of employees correlates more strongly than other indicators with structural features," and that "the size of an organization has a strong impact on resulting structure" (2017, p. 1144). They argue that, for example, "large organizations have more specialization in job types, more standardization of rules and formalization of procedures, and often more decentralization of decision making" than is typically found in smaller organizations (2017, p. 1144). Additionally, the organizational structure may be challenged as the size of an organization grows through adding new people to the organization, including by creating "inadequacies and errors in communication" and introducing "weakness in integration and utilizing skills, knowledge and experience of members (through routinization of work)" (Katz & Kahn, 1978, pp. 107–108). Accordingly, the size of the organization (in

[24] Including "the number of plant locations or offices, net assets (manufacturing), gross sales (manufacturing or service industries), or number of units that can be produced or people who can be served" (Kottke & Pelletier, 2017, p. 1144)

terms of the number of its members) can have an important impact on each of the following salient features that I describe.

Caplow similarly argues that "not only does the size of an organization affect its character, but changes of size at certain points along a scale of expansion are more important than at other points[25] (1957, p. 484). Caplow accordingly developed a system for classifying organizational size "based on a criterion of interaction possibilities" that is independent of any other organizational structures and "reflects the patterning of the interaction network by the sheer size of the group" (1957, p. 486). This classification system divides organizational sizes into four general categories: small groups, which can also be divided into primary groups in which each member interacts individually with every other member (from 2 to about 20 individuals), and non-primary groups (from 3 to about 100 individuals); medium groups (ranging from about 50 to perhaps 1,000 members); large groups (ranging from about 1,000 to perhaps 10,000 members); and giant groups (anything over approximately 10,000 members) (Caplow, 1957).

Discussions of video game design organizations in particular may refer to the size of the organization based on factors such as revenue (e.g., Newzoo, 2019), number of games published in a year (e.g., Dietz, 2015) or employees (e.g., Entertainment Software Association, 2017). Most discussions, however, do not provide specific definitions for terms such as "large" and "mid-size," and the definition of the commonly-used term

[25] Such points being, for example: "A three-person group has certain properties which are lacking in two-person groups and in four-person groups. If a work crew with fifteen members is doubled in size, its structure and its activities are quite certain to change, because the pattern of close interaction possible among fifteen persons is improbable among thirty. On the other hand, a work group of two hundred members might be doubled in size without any striking changes in its structure" (Caplow, 1957, p. 484).

"AAA game development" (as opposed to independent, A, or AA game development) is somewhat vaguely defined in terms of having a large budget ("AAA video game industry," 2019). In a rare direct assessment of video game organization sizes, the Entertainment Software Association recently determined that "only a handful of AAA game publishers employ more than 500 employees and are considered major corporations," while 99.7% of American-based companies employ fewer than 500 employees and 91.4% employing fewer than 30 employees (Entertainment Software Association, 2017, p. 15). They accordingly argue that "almost 100% of American game companies are considered small businesses," basing this assessment on "the qualifications set by the Small Business Administration" (2017, p. 15)—making the division between "small" and "large" organizations in this context seem unspecific at best, and useless at worst. With such a lack of specific definitions for video game organizations in terms of employees/members, a finer-grained approach to understanding participants' organization sizes could prove useful to illuminating other organizational features.

2.3.1.2: Task Division and Allocation

As Kottke and Pelletier (2017) indicate, organization size often has a direct effect on the division of tasks and roles within an organization. When framed in terms of "specialization," task division involves "the extent to which job tasks require highly specific (i.e., specialized) work skills or, conversely, can be carried out successfully by individuals who possess more broadly available knowledge, skills, and abilities" (2017,

p. 1142). Within any type of organization structure, it is important to identify "where the structure might result in gaps in the work or duplication of tasks," as important tasks that are not clearly delineated can "fall through the cracks" or may cause "overlap in work assignments" (2017, p. 1142). Additionally, "depending on the structural configuration," some members may be expected to complete more tasks than they can realistically manage within a given time frame, while others may find themselves without any actionable tasks (2017, p. 1142).

The extent of task division and the degree to which it is strictly enforced is also related to the type of organization. For example, "an elaborate division of labor" may be considered a "key characteristic of bureaucratic organization" (Volti, 2011, p. 83). Spinuzzi (2015) argues that implied in this strong division of labor within bureaucratic organizations are narrow specializations that have been compartmentalized into departments. In such a compartmentalized structure, "creatives talked to creatives, accountants talked to accountants, but when they talked across departments, it was mostly through managers or through meetings curated by managers" (2015, p. 22).

Unlike this bureaucratic model, institutional adhocracies allow for some degree of cross-cutting in tasks between departments and divisions, particularly by shifting focus from the department to the project (Spinuzzi, 2015). In this approach, while departments still exist, members can "look beyond their departments for team members who can bring unique value to that unique project"—particularly specialists (2015, p. 24). In contrast, networks (or all-edge adhocracies) go beyond the departmental structure to be fully project-oriented and connect people "in a relatively flat organizational structure" (2015,

p. 34). In this case, the division of tasks may be delineated for a particular project based on specific needs, allowing the subcontract*or* of one project to become the subcontract*ed* in the next project. Thus, in all-edge adhocracies, "the borders among fields, specialties, disciplines, trades, and organizations are porous," encouraging voluntary alliances in which each member may "pursue their own motivations, values, and ideal outcomes as well as those of the alliance" (2015, p. 27).

One key tension in the division and allocation of tasks that is particularly relevant to collaborative video game design is that between "clarity" and "creativity" (Kottke & Pelletier, 2017). While a lack of clarity in task or role responsibility can "lead to employees' working on tasks that fit their personal preferences" without aligning with organization-wide goals, an excessive formalization of these roles "may overdefine how employees are to do their work" (2017, p. 1145). As a result of too strict of a definition, "creativity might be stifled" as many organization members feel "they should 'keep to the script'" (2017, p. 1145). Additionally, Spinuzzi highlights how "modular work entails standardizing parts, materials, and actions. It also entails deskilling, in which tasks are broken down into easily learnable and repeatable components, decision making is reserved for management, and automation becomes prevalent" (2008, p. 137). Langlois argues that this kind of modularization can hinder innovation, as "the tasks in an innovative development project cannot be partitioned in advance, since knowledge is continually changing. In such a case, the modularization of the system (the development project) has to change continually" (2002, p. 25). Accordingly, balancing this tension

between “clarity” and “creativity” depends on effective coordination between members and tasks.

2.3.1.3: Coordination

The methods for coordinating work within an organization also vary by organizational structure. The degree of interdependency (or integration) within an organization impacts the “level of integration of tasks and activities across different workers,” wherein highly-integrated organizations “require the cooperation and collaboration of many different employees to get work done” while nonintegrated organizations “are composed of individuals who work largely on their own and do not require assistance or products from other employees” (Kottke & Pelletier, 2017, p. 1142). Interdependency within an organization additionally creates a tension between “excessive autonomy” and “excessive interdependence”: on one hand, should members become too isolated (or overly autonomous), they may become disconnected from the larger goals of the organization and find it too difficult to connect their work with other members’ efforts (2017, p. 1145). On the other hand, if members’ work becomes too closely connected, “time could be wasted because of distraction, obtaining approval for decisions from the many levels in the hierarchy, and backlogs of work that affect successive steps in the work cycle” (2017, pp. 1145–1146).

Indeed, one common way of coordinating both members and tasks is through the use of hierarchies, including managers. The factor of “span of control” within an organization structure describes the extent to which other members report to a single manager, with the height of managerial span being frequently related to the levels of hierarchy within an organization (Kottke & Pelletier, 2017). Flatter (or more horizontal) organizations frequently use large spans of control with “fewer layers between entry-

level positions and top management," while highly vertical hierarchical organizations ("in which there are many levels from the bottom to the top") are often constrained into much smaller spans (2017, pp. 1142–1143).

This type of coordination also shapes how information flows through the organization, in the form of communication. In a "rigid bureaucracy," for example, "the manager operates as the official communication and coordination point for his or her department" through which all official communication—regardless of informal discussion between departments—must pass "via the chain of command" (Spinuzzi, 2015, p. 22). In contrast to this model, networked organizations that span boundaries and connect many different types of actors require "continual communication" (2015, p. 155) and a process of mutual adjustment (Mintzberg, 1979). In a structure with more distributed work, therefore, "the emphasis shifts from predictable, monodirectional flows of information and services to unpredictable, multidirectional flows" (Spinuzzi, 2008, p. 140), and "negotiation becomes an essential skill" (p. 143). Such adhocratic models are accordingly coordinated through this dynamic process of mutual adjustment, rather than coordinating through the same type of formalized behavior that bureaucracies use (Spinuzzi, 2015, p. 25). Spinuzzi argues that such methods of coordination in a networked model are effective "because the organizational structure is relatively flat, with everyone in the team talking—and listening—to everyone else" (2015, p. 25); as long as this level of communication remains viable, then effective coordination is also possible.

In fact, this type of constant communication and versatility is both a strength and a weakness when it comes to successful coordination within the all-edge adhocratic structure (Spinuzzi, 2015, p. 28). On one hand, the growth and sophistication of ICTs that promote "opt-in collaboration on a broader scale" have allowed members to effectively

"communicate, coordinate, and cooperate" within such structures (2015, p. 30), particularly when that work is still relatively geographically local. One the other hand, "necessary support for virtual teams has not grown so quickly, with virtual team members reporting difficulties in training, building relationships, developing leadership styles, and making swift decisions" (2015, p. 30). Bureaucratic structures are not immune to coordination issues, either; coordination issues in these structures may be caused by over-emphasizing rule-following and entrenching managers who are "focused on guarding their turf," in addition to the accretion of excess "bureaucratic layers, procedures, and paperwork" (2015, p. 23). Spinuzzi argues that a particular challenge in coordination within bureaucratic structures is the ability to address "so-called 'wicked problems,' ill-defined problems that require perspectives from different specializations" (2015, p.23).

As mentioned above, some larger organizations have additionally turned to "cross-functional project teams" to address some of these challenges in coordination (Spinuzzi, 2015, p. 23). Frequently, such teams may be self-managing but "responsible for completing a specific, well-defined job function," while the team's members are "cross-trained to perform any task the work requires and also have the authority and responsibility to make the essential decisions necessary to complete the function" (Barker, 1993, p. 413). An additional strength of such coordination through teams is that this structure allows members to "concertively" reach a consensus on the team's values and work approach that can bring "the abstract values of the [organizational] vision statement into concrete terms" (1993, p. 422). Although team members may struggle with establishing such control because they have to take the lead in negotiating "such supervisory issues as accepting responsibility, making decisions, and setting their own ground rules for doing good work"—including "deciding who was going to perform which tasks" and "whether to hire or fire team members"—this type of coordination does

potentially allow for greater input of diverse team through a consensus-building process (1993, p. 416). Barker argues that such a coordination process is especially important because, "in an organizational situation, a consensus about values informs and influences members' outlooks on and processes of work activity, such as decision making" (1993, p. 423). Accordingly, the decision-making process is another salient feature of organizational structure that builds on each of the features (size, task division and allocation, and coordination) that I have discussed so far.

2.3.1.4: Decision Making

During the process of collaborative work, both individuals and the organizations that they constitute must constantly make decisions that affect their work and its outcomes. The process of decision-making is a key part of several models of organization structure, especially ones which describe the role of centralization[26] within the organization (Kottke & Pelletier, 2017). Depending on the structure of the organization, the ability to make decisions can range between systems where "all or most decisions are made by a small group of individuals, often the top management team" to systems where "power and decision making are spread across individuals throughout the organization," in which individual members "have the latitude and authority to make day-to-day decisions and other important decisions that affect their work" (2017, p. 1145). In general, highly centralized decision-making is associated with the more bureaucratical models of organizational structure.

[26] The structural factor of centralization can generally be used to describe "the distribution of decision-making authority, information, and power throughout an organization" (Kottke & Pelletier, 2017, p. 1145). Centralization within an organization "may be dictated and described in formal rules, policies, and job descriptions," but also "informally through the behaviors and norms introduced and reinforced by those in power, such as a leader who purposefully limits access to key information" (Kottke & Pelletier, 2017, p. 1145).

Simon argues that "decision making is the heart of administration" and that studies of organizational administration should be "concerned with the limits of rationality, and the manner in which organizations affect these limits for the person making a decision" (1976, p. 241). Additionally, theory focused on an "attention-based view of the firm" argues that organizational attention is "shaped not only by organizational goals, but by the firm's formal and informal structures, issues, initiatives, and decision-making channels" (Gavetti, Greve, Levinthal, & Ocasio, 2012, p. 15). Some previous research has indicated that the decision rules involved in strategic decision making can be more significant than top management characteristics or other contextual factors (Papadakis, Lioukas, & Chambers, 1998).

In describing the fundamental features of the modularity theory of the firm, Langlois argues that "in order to understand the corporation (and organization in general), we need to understand how and why decision rights are partitioned in collaborative enterprise"; accordingly, the modularity theory of the firm holds that "organization is always a demodularization and repartitioning that severs the right of alienation from at least some of rights of decision" wherein "the technology of production both causes and shapes the resulting nonmodular interconnections" (2002, p. 32). Spinuzzi highlights how "decision making is reserved for management, and automation becomes prevalent" (2008, p. 137) in more modular organizations and chained activity networks, in contrast to the ongoing negotiations and mutual adjustments found in more networked organizations.

The uncertainties and shifting variables inherent to making decisions in a networked organization have also been the focus of previous research (Koppenjan & Klijn, 2004). Spinuzzi describes the "flat organization" of rotating leadership as inherent to any all-edge adhocratic network organization structure in which "team members are

specialists in different things" and "their specialties often come to the forefront at different stages of the project; each might thus become the de facto leader" (2015, p. 34). In such structures, "allied specialists have to direct their own efforts" and "must coordinate by mutual adjustment rather than by fixed rules and procedures, leading to far more communication among members" (2015, pp. 34–35), thereby distributing decision-making processes. Similarly, in a study of the decision-making process for a network administrative organization, Hofland identified the key principles of "broad participation, advancing quality improvement, fairness, nimbleness, and continuous improvement" that guided a consensus-based approach; these principles were then secured through "the four behaviors most commonly used by network managers: activation, framing, mobilizing, and synthesizing" (2013, p. 92).

Gavetti et al. argue, however, that because most studies focused on assessing the results of decision making "rely on overall performance measures such as return on assets or sales, which are top-level organizational goals, their research designs are better suited for predicting actions that top managers make than decisions taken at the sub-unit level." (2012, p. 11). This approach may therefore not adequately highlight the tensions that exist between individuals and their organizational structures during everyday decision making. For example, Barker describes how "a rule requiring a customer service representative to have all refund decisions approved by someone two hierarchical levels above may impede the representative's ability to meet a customer's demands for a quick response. Thus a rule that apparently benefits an organization's effectiveness (getting managerial approval and oversight of refunds) also constrains its effectiveness (slows down response)" (1993, p. 410). Accordingly, the centralization of control in a highly bureaucratic organization creates "a paradoxical situation" whereby "the same rational activities that enable collective organizational interaction eventually come to constrain

that activity in ways often difficult for us to perceive, much less comprehend, the consequences and ramifications" (1993, p. 411). Yet, networked organizational structures are not immune to such contradictions between the individual and the organization in decision making, as "projectification" and diffusion of decision making within all-edge adhocracies may come "at a cost" of weaker strategy formation that tends to "form implicitly via reactive decisions" and "to be regarded as disposable" (Spinuzzi, 2015, p. 33). Thus, regardless of exact organization structure, the process of decision making can highlight important tensions in an organization between agency and structure.

2.3.1.5: Recruitment and Hiring

Finally, an important factor in how people within an organization are "configured and coordinated" (Kottke & Pelletier, 2017, p. 1143) is the process by which an organization decides when and how to hire (or otherwise recruit) new members. While many aspects of organizational culture[27] are undoubtedly also involved in the hiring process of an organization, the outcome of this process has a clear effect on the structure of the organization. Additionally, the process of recruiting and hiring ultimately interacts with each of the other salient features of size, task division and allocation, coordination, and decision making.

In describing key aspects of a successful matrix-structured organization, Galbraith argues that "the first step in building the human capital that will thrive in a matrix organization is the recruitment and selection process" wherein "a hiring profile to select candidates" is developed and where "once important candidates have been found, the

[27] Research on organizational culture can broadly be understood as focusing on "the shared meaning, interpretations, and understanding of various organizational events among organizational members" that "provides a general understanding of how, when, and why members behave in certain ways" (Dickson, Mullins, & Deuling, 2017, p. 1100)

leadership participates actively in the attracting and hiring process" (2009, p.186). According to Volti, a formalized recruiting process is a "common feature of bureaucracies" wherein "bureaucratic impersonality, coupled with the use of rationally derived procedures, produces a 'meritocracy' in which positions are staffed and jobs are done in accordance with the employees' capabilities" (2011, p. 83). In contrast to these hiring processes, other approaches in virtual organizations (or "imaginary organizations") encourage focusing on growing existing partnerships to "grow without becoming larger," instead of conducting additional hiring (Hedberg et al., 1997, p. 68). Similarly, the adhocratic model of nonemployer firms relies on subcontracting specialists that can be cut loose at any point (generally the completion of a specific project) (Spinuzzi, 2015).

In particular, discrimination in hiring processes has been studied from a number of angles, including at the levels of resume/C.V. filtering (Bertrand & Mullainathan, 2004; Steinpreis, Anders, & Ritzke, 1999), judging prestige associated with postsecondary degree-granting institutions (Deming, Yuchtman, Abulafi, Goldin, & Katz, 2016), employing specific recruitment practices and firms (Eriksson & Lagerström, 2012; Rivera, 2012), using personality tests and assessments (Song, Wee, & Newman, 2017), relying on the perceived status of a referrer (Derfler-Rozin, Baker, & Gino, 2018), structuring the interview process (Graves, 1999; Nordstrom, Huffaker, & Williams, 1998) assessing outside information gathered from social networking sites (Pike, Bateman, & Butler, 2018), and using external financial credit checks/scores (Volpone, Tonidandel, Avery, & Castel, 2015). Previous research has also shown that individuals from underrepresented groups are especially unlikely to be hired for top-level management positions (e.g., Fernandez-Mateo & Fernandez, 2016). In the case of information technology and programming positions, even students within formal computer science

education programs are aware of the role that diversity concerns may play in hiring decisions (Chinn & VanDeGrift, 2007, 2008).

To address such vectors for hiring discrimination, researchers have argued for a range of interventions and adjustments to the hiring process, including adopting a more structured approach to interviewing (e.g., Latu et al., 2015) and evaluating applicants with a fixed tool (e.g., Wolgast, Bäckström, & Björklund, 2017), increasing the diversity of hiring qualifications (e.g., Gorman, 2005), advertising a focus on deeper-level diversity in Human Resource policies (e.g., Casper, Wayne, & Manegold, 2013), refining targeted recruitment approaches (e.g., Avery & McKay, 2006), and increasing the diversity of interviewers (e.g., Latu et al., 2015). In terms of internal hiring, open posting and evaluation of a position may result in better candidate quality and worker satisfaction than "a predominantly relational process in which a manager personally identifies a preferred candidate and 'slots' him or her into an open job" (Keller, 2018, p. 848). However, it is not clear which of these approaches might best support inclusion within information work organizations—particularly video game design organizations.

2.3.2: Designing for Diversity Within Organization Structure

As Acker (1990) reminds us, organizational structures are not neutral; "inequality regimes" within these structures dictate expectations and limitations based issues such as race, class, and gender through a set of "interlocked practices and processes that result in continuing inequalities" for members of underrepresented groups (Acker, 2006, p. 441). Despite this knowledge, the relative merits of specific organizational structures for supporting diversity are still under debate (Dobbin, Schrage, & Kalev, 2015).

Acker argues that "hierarchies are usually gendered and racialized, especially at the top" and that "the steepness of hierarchy is one dimension of variation in the shape

and degree of inequality," whereby "the steepest hierarchies are found in traditional bureaucracies in contrast to the idealized flat organizations with team structures, in which most, or at least some, responsibilities and decision-making authority are distributed among participants" (2006, p. 445). According to Smith-Doerr, for example, firms "governed by networks, rather than bureaucracies," allow for greater equity between male and female supervisory positions because "hierarchy and rules hide gender bias, while reliance on ties outside the organization provides transparency and flexibility" (2004, p. 25). While more "flat" team structures might provide greater opportunity for equity than hierarchical bureaucracies, this opportunity does not necessarily come without strings (Acker, 2006). For example, adapting to being treated "equally" on a team within a computer development firm may require members from underrepresented groups to invent ways to cope with a work culture that does not fit well with their own identity, and which may actively create the feeling that they are "partly outsiders who [do] not belong" (Martin & Meyerson, 1998).

Other research suggests that team-organized work may not reduce gender (Barker, 1993) or racial (Vallas, 2003) inequality much at all within an organization, as biases are frequently simply shifted as teams are integrated into the organization. In contrast to criticisms of the bureaucratic model, Dobbin et al. (2015) found that reforms of bureaucratic organizations can indeed be effective at increasing diversity, but only when such reforms are viewed as part of a "complex story." They argue that reforms that "engage managers in recruiting and training" members of underrepresented groups for management posts can successfully promote diversity, while "those designed to control managerial bias lead to resistance and tend to backfire" (2015, p. 1034). Other research indicates that challenging assumptions that workplace "bureaucracy" is inherently bad or

harmful for diversity actually reveals prospective improvements for groups such as women (Baron et al., 2007).

Similarly, there is little consensus about how (or at what points) to best shape information technology organizational structures in order to support diversity. Some previous research indicates that early organizational structure design decisions have some of the longest-lasting effects on an organization, even if many other aspects of the organization change. For example, Baron et al. found that "the organizational models or blueprints espoused by founders in creating [a] new enterprise" had profound and enduring effects, "even in a context in which firms face intense selection pressures" (1999, p. 1). They further theorize that the "logics of organizing" of high-technology organization founders generally come from three main sets of factors that are essentially drawn from the founders' previous experience and personal perspective[28] and thus have important implications for diversity. In the case of nonemployer firms, founders may rely on a combination of the key tactics of networking, affinities, referrals, and market solutions for finding subcontractors (Spinuzzi, 2015)—all tactics which may present similar challenges to recruiting and retaining individuals from underrepresented backgrounds.

If such factors do indeed fundamentally shape information technology organizational structure, then we might reasonably expect similar implications for video game design. Thus, understanding exactly how such "logics of organizing" are formed

[28] The first is "the stock of social capital on which the founders can draw, by virtue of their prior work experiences, connections to labor market institutions (e.g., universities, competitors), and social networks" (Baron et al., 1999, p.32); the second is "the positions of founders in social networks, particularly ties to key gatekeepers capable of shaping or dictating organizational structure" (p. 32); and the third is "competitive labor market strategy" (p. 34). I would loosely categorize them respectively as "who you are (or are perceived to be), where you've been, and what you know"; "who you know, and who you are allowed access to"; and "what you think you need to do to succeed."

and implemented could be crucial to conceptualizing how organization structure might best support different types of diversity.

2.3.3: The Effects of Diverse Individuals Within an Organization

Fundamentally, the "logics of organizing" that Baron et al. (1999) describe are one significant example of how an individual's unique perspective can impact the structure of an organization. Accordingly, one way for individuals to either express a diverse perspective or to actively support diversity within an organization is to seek a position such as "project manager"—or even to found a completely new organization. The ability to create change from the "top down" or to assert a large amount of agency within an organization, however, is obviously a more privileged—and more uncommon—option than many individuals are able to pursue.

Yet there are other ways that individual agency can be expressed within organizational structures. Bjerregaard and Jonasson argue that by moving away from the idea that "agency is primarily associated with the rather exceptional creation or disruption of a relatively stable [institutional] structure," researchers and theorists can instead analyze a new form of agency found within the "continuous, active work of managing novel contradictions" that is performed by individuals within their everyday work (2014, p. 1507). Similarly, Panourgias et al. propose that creativity within video game design should be understood as "an on-going flow that, following an initial 'creative impulse,' ripples through the sociomaterial entanglements of a particular setting, reconfiguring them in the process and spreading out in time and space in often unexpected ways" (2014, p. 122). Panourgias et al.'s (2014) conceptualization also provides a useful theoretical model for understanding how individuals can express agency in diverse ways

within specific systems of organization structure and ICT selection/use that their collaborative video game design work is embedded within.

2.3.4: Needs for Future Research into Diversity and the Structure of Organizations in Video Game Design Work

As Johnson (2013) indicates, the influence of organizational structure on diversity within video game design work is both of critical importance and also desperately under-researched. Although discussing the structure of organizations tends to turn the lens of diversity towards examining structural aspects of collaborative video game design work, focusing on organizational structure does not necessarily eclipse individual agency within organizations—especially in terms of diverse perspectives, interpretations, and reactions to those structures. Moreover, I argue that a focus specifically on the "logics of organizing" within video game design work inherently requires analyzing the specific, individual perspectives of each "decision-maker." Applying standpoint epistemology or a situated knowledges model (Haraway, 1988) to such analysis would illuminate diverse individuals' experiences within the organizational structure.

An organizational structure approach to understanding diversity within video game design would also correspond well with Johnson's call to compare "different organizational structures," as well as analyzing "studios of different sizes" and the differences between "independent, 'indie,' and publisher-owned studios" (2013, p. 156) within the field. Additionally, as both Johnson (2013) and Panourgias et al. (2014) have indicated, organizational structure affects the specific way that work is done within a collaborative video game design team. Therefore, considering organizational structure within video game design through a lens of diversity cannot be separated from examining "the principal tools game developers make use of in their everyday work, how the

workflow is organised, and how the work is deeply embedded within patterns of collaboration" in this field of work (Koleva et al., 2015, p. 142). This area of "everyday work" also provides a very rich space for understanding how diverse individuals can exert their own agency within creative work through their interactions with the ICTs that shape and enable their work. Thus, I next consider specifically how the lens of diversity might be applied to an examination of collaborative work tool selection and use within video game design.

2.4: Collaborative Work Tool Selection and Use

Group workflow and work tools, while often influenced or determined by organizational structure, also have an important relationship to diversity (Johnson, 2013). As with most digital design and information technology work, the use of specific tools inherently shapes both the work and the collaboration that team members can do within video game design. Therefore, in order to understand how the usage of ICTs within an organization can both shape and by shaped by diversity, we must also examine how organizations/groups select tools and then proscribe—or inscribe, or prescribe—the use of those tools (Latour, 1996).

Previous studies have examined the use of collaborative design and/or communication tools in different forms of digital creative design (e.g., Hewett & Robidoux, 2010). Some researchers have focused specifically on how the use of specific ICTs can promote or hinder creativity of either an individual or of an entire group (e.g., Farooq, Carroll, & Ganoe, 2007; García-Gavilanes, Mejova, & Quercia, 2014; Pace, 2012). Others have looked at the specific modes of communication employed by such groups (Y. Zhang & Candy, 2007) or the particular role of "leaders" in modelling creativity within collaborative organizations (Pace, O'Donnell, DeWitt, Bardzell, &

Bardzell, 2013). Few of these examinations—with the notable exception of Panourgias et al. (2014)—have specifically considered the role of diversity or diverse perspectives. In particular, as Koleva et al. (2015) and Panourgias et al. (2014) indicate, tool use and selection is a key feature of collaborative video game design work that deserves deeper examination both more generally and through the lens of diversity.

2.4.1: Selecting Digital Tools to Support Diverse Work

Several areas of research have developed notable models and theories to explain and guide the process of selecting ICTs for use in specific tasks; among the most prolific of these fields are IS, Computer-Supported Cooperative Work (CSCW), and Human-Computer Interaction (HCI). Each of these fields still has some trouble accounting for diversity within tool selection models. For example, although there have been significant attempts to integrate diverse perspectives into the field of HCI—including queer theory (e.g., Light, 2011) and feminism (e.g., Rode, 2011)—HCI concepts such as "cognitive fit" and "task-technology fit" still struggle to reconcile differences both between diverse individuals and between individuals and larger group structures (Davis, 2006; Te'eni, 2006). Within IS, the widely-used Technology Acceptance Model (Davis, 1989, 1993; Legris, Ingham, & Collerette, 2003)—which focuses on variables such as the "perceived usefulness" and the "perceived ease of use" for individual users—faces similar issues.[29] Although most of these models acknowledge that individual and group differences may play a role in technology use decisions, few of these models critically analyze the

[29] Additionally, attempts to use tool selection and use models between disciplines often falter due to issues of field-specific cultural and academic differences (Grudin, 2006).

diversity-related tradeoffs that may be involved with selecting a technological tool to support collaborative work within a specific social and organizational context.[30]

In contrast to the more "individually-focused" models such as cognitive fit and task-technology fit, other theories within fields such as IS have tried to more obviously incorporate some of the organizational aspects of tool selection, design, and use (e.g., Poole & DeSanctis, 1990). For example, Orlikowski's (1992) structurational model of technology acknowledges "institutional characteristics," while the Social Influence Model of Technology Use (Fulk & Steinfield, 1990) considers factors such as "social influence" and "situational factors." Yet while some models of ICT adoption and use have made gestures towards acknowledging diverse people, work styles, and perspectives within an organization (e.g., Mason & Mitroff, 1973), such potential forms of diversity have not been deeply examined.

2.4.2: The Effects of Diverse Individuals on Work Tool Understanding and Use

In addition to studying "formal" work organizations and institutions, researchers in fields such as CSCW have also examined ICT selection and use within non-profit organizations (e.g., Ariza-Montes & Lucia-Casademunt, 2014) and volunteer organizations (e.g., Eimhjellen, Wollebæk, & Strømsnes, 2013).[31] Even in situations where the structure of a collaborative work group may be less formal, decisions are still made within the group not only to use a particular ICT, but also about the specific "rules"

[30] Similarly, previous calls for better understanding the role of emotional affect (Sun & Zhang, 2006) and personal aesthetics (Tractinsky, 2006) in technology use decisions have acknowledged potential diversity between users without directly examining how such differences affect use.

[31] Additionally, many similar analyses—especially within the field of CSCW—have openly questioned the nature of "work" within more informal or loosely-organized groups using ICTs to perform collaborative tasks (e.g., Schmidt, 2011). Such research has also looked at topics related to supporting diverse individuals, motivations, and perspectives while collaborating on projects such as Wikipedia (e.g., Sydow, Baraniak, & Teisseyre, 2016), Open Source Software (e.g., Engelhardt & Freytag, 2013), and video production within video game fan communities (Pace, Toombs, et al., 2013).

of how that ICT may be used. Individuals who either cannot or choose not to conform to these usage guidelines may not remain in the group or may not be considered legitimate members of the group (Lave & Wenger, 1991; Sims, 2014). This kind of "rule-enforcement" for ICT selection and use will also presumably vary again based on organizational structure and culture, with highly bureaucratic organizations likely having (at least in some ways) even greater structural control and definition of how the "users" of ICTs within the organization are conceptualized and may interact with these tools—especially compared to more self-organizing or networked groups (e.g., Crowston, Li, Wei, Eseryel, & Howison, 2007). Given that video game design organizations often take forms similar to these groups (in addition to the form of larger, "formal" work organizations), we may expect similar issues within this field. Thus, in many ways, "diversity" has already been pre-defined and enacted before many individual users may have interacted with a tool at all.

As with personal identity and expressions of diversity outside of the workplace, use of ICTs within an organization can have a large impact on both individual work identity (Carter, 2015) and larger group (Boudreau, Serrano, & Larson, 2014) and/or organizational identity (Tyworth, 2014). Although individuals' use of ICTs may be bounded by organizational and technological limits, they unavoidably exert some agency both in using those tools and in their self-identity as users of those tools. DeSanctis (2006) argues that even the word "user" often erases the full individual diversity that the idea may actually encompass. Similarly, Bardzell and Bardzell's (2015) attempt to "reconfigure" the user as a "subjectivity of information" allows for some diversity of individual expression and is meant to encourage greater human agency in ICT design and

research.[32] Despite great strides in areas such as user-centered design and user studies towards a more diverse concept of the "user" and their role in technology design (e.g., Oudshoorn & Pinch, 2003; Oudshoorn et al., 2004), the same attention to diversity has not been as clearly applied to studies of tool selection and usage—especially within organizations.

Finally, Panourgias et al. argue that "the assumption of a separation between creativity on the one side and technological development on the other" is not a productive approach to understanding individual agency in video game design work (2014, p. 124). They contend that it is, therefore, "more fruitful to focus on the intimate tangle of digital systems, objects and people and their co-emergence, co-production, and the mediations amongst them that often subvert conventional disciplinary, organizational, and territorial boundaries" (2014, p. 124). This approach also potentially affords greater opportunity for identifying and understanding individual diversity within the use of ICTs in video game design work.

2.4.3: Needs for Future Research into Diversity and Collaborative Work Tool Selection and Use in Video Game Design Work

Although many researchers have studied ICT use and adoption in organizations (Bouwman, 2005), few have looked closely at the relationship of diversity to these decisions. Furthermore, none have looked specifically at this issue within the field of collaborative video game design. ICT selection and use therefore needs to be studied more within the context of video game design work, as the specifics of the tools used

[32] Some HCI scholars have even moved away from the concept of the "user" in favor of terms such as "maker," "crafter," or "hacker" in an attempt both to broaden the range of contexts that might be examined and to create a greater sense of individual agency and identity—although these terms carry their own set of issues and their actual relationship to encouraging greater empowerment is still not entirely clear (Roedl, Bardzell, & Bardzell, 2015).

within collaborative video game design work are central to both the finished work product and to shaping how that product is made (Johnson, 2013; Koleva et al., 2015; Panourgias et al., 2014). Yet current models of technology acceptance, adoption, and use from fields such as IS, CSCW, and HCI do not easily afford for in-depth examinations of diversity and diverse individuals. When considering the role of diversity in such decisions, for example, we might wonder if a default (and unspoken) model similar to the "logics of organizing" that Baron et al. (1999) describe is at work.

Additionally, whenever individuals assert some form of diversity through their individual usage of ICTs within an organization, these diverse perspectives will inevitably bump against each other. Such differences in work styles (coming from the differing use of work tools) may affect the collaborative work of the group/organization—with potentially positive or negative consequences. Although previous research has looked at how diversity within a group may affect creativity and work performance (e.g., Jackson & Ruderman, 1995), we might consider more deeply the role of diverse tool usage in shaping that ability to both express and understand generative differences. For digitally creative and highly collaborative fields such as video game design work—wherein, moreover, both the final "product" and the work process itself are inextricably linked to ICT selection and usage—applying the lens of diversity seems especially urgent and relevant.

2.5: Summary of Previous Research

As my review of previous literature on the role of diversity within collaborative video game design work indicates, several gaps in this research need to be addressed. First, the area of everyday collaborative video game design work itself needs to be better understood in order to fill the "paucity" that Koleva et al. (2015) have correctly

identified: this basic research must be done in order to understand video game design work from a number of angles, including through the lens of diversity. Additionally, examining various forms of diversity within this particular field can inform both current and future practitioners about how to better understand and anticipate—and, hopefully, to support—such diversity within their own work (Johnson, 2013; Panourgias et al., 2014). My research should accordingly also be valuable for making video game design education curricula recommendations.

More broadly, examining diversity within this particular area of work contributes to the literature on workforce diversity and on broadening diverse representation, especially within ICT design-related fields. Because each field represents a unique combination of current context and history, it is important to analyze different fields in order to be able to understand which elements of diversity may be similar or different across fields. Additionally, research into the field of video game design should provide generalizable insights into information technology and digital design work.

This area of research should also be brought into conversations around diversity that are happening within other fields of research, such as within the HCI, IS, organizational studies, and CSCW literatures. Addressing key questions in these areas should produce valuable insights that contribute to several key areas of research, including: understanding and supporting the participation of underrepresented and marginalized groups in the STEM workforce, particularly in information technology areas; examining and comparing different information organization structures, particularly in the fields of digital creativity and design; and refining tool selection, acceptance, and use models and theories, particularly within the disciplines of IS, HCI, and CSCW.

2.6: Research Questions

Identifying exactly what "diversity" is and where it might be found (or sought for and *not* found) within the field of collaborative video game design is a complex problem, with many different approaches. Based on my above review of previous work, I identified three concrete areas to study diversity specifically within this field:

- Understanding the structure of organizations
- Understanding collaborative work tool selection and use
- Broadening participation of underrepresented and marginalized groups

Although these areas are all deeply interrelated, each one offers a unique window into the role of diversity within the field and an opportunity to analyze specific points of comparison between both individuals and groups, while remembering the tension between structure and agency that I described in Chapter 1. The first two areas (understanding the structure of organizations and understanding collaborative work tool selection and use) represent gaps in our current understanding of the daily the work of collaborative video game design that I identified during my review of the existing literature specifically on this field. The third area (participation of underrepresented and marginalized groups) is drawn more broadly from the literature surrounding diversity and representation within information technology and STEM work, as well as from a lack of research on how to support these groups within the particular field of collaborative video game design work.

Each area leads to its own research question, in order:

RQ1: What is the relationship between the structure of an organization and the role of diversity within collaborative video game design work?

Although research has shown that organizational structures are not neutral and that "inequality regimes" within these structures dictate expectations and limitations

based issues such as race, class, and gender (Acker, 2006, p. 441), the relative merits of specific organizational structures for supporting diversity within information technology fields are still under debate. While Smith-Doerr (2004) argues, for example, that network-structured organizations allow for greater equity than hierarchical organizations, other research indicates that challenging assumptions that workplace "bureaucracy" is inherently bad or harmful for diversity can actually improve equity (Baron et al., 2007). By focusing on such structures (such the "network," or "bureaucratic" model)—and particularly salient features of these structures—that have previously been tied to this area of work and to diversity, I intend to identify and clarify the potential merits or problems related to these structures.

Additionally, as both Johnson (2013) and Panourgias et al. (2014) have indicated, organizational structure affects the specific way that work is done within a collaborative video game design team. Yet while Johnson (2013) argues that changing the organizational conditions on a structural level can better allow for diversity and individual agency, Johnson does not specify in detail exactly how those organizational structures might better support diversity.

Accordingly, focusing on understanding the relationship of organizational structures and the role of diversity within video game design also corresponds well with Johnson's call to compare "different organizational structures," as well as analyzing "studios of different sizes" and the differences between "independent, 'indie,' and publisher-owned studios" within the field (2013, p. 156). Carefully examining such differences also allows me to evaluate Johnson's argument that commercial video game studios "erect boundaries through the organization of work that tends to discourage the production of a diverse range of games" (2013, p. 136) by analyzing it within multiple organizational contexts and structures. Lastly, I also argue that identifying and

understanding how the inherent "logics of organizing" (Baron et al. 1999) of these structures are formed and implemented within this field is crucial to understanding how organization structure might best support different types of diversity.

RQ2: What is the relationship between diverse perspectives held by different individuals and groups of stakeholders within video game design work and the selection and use of specific work tools?

As Koleva et al. (2015) and Panourgias et al. (2014) indicate, tool use and selection is a key feature of video game design work that deserves deeper examination both more generally and through the lens of diversity. Whether in highly formal or more informal organizations, decisions are made within the group not only to use a particular work tool, but also about the specific "rules" of how that tool may be used. Accordingly, individuals who either cannot or choose not to conform to these usage guidelines may not remain in the group or may not be considered legitimate members of the group (Lave & Wenger, 1991; Sims, 2014). Whenever individuals assert some form of diversity through their usage of work tools within an organization, therefore, these diverse perspectives will inevitably bump against each other and will create visible moments that these individuals can potentially be asked to identify and examine.

While areas of research such as IS, CSCW, and HCI have developed notable models and theories to explain and guide the process of selecting ICTs for use in specific tasks, the current models of technology acceptance, adoption, and use do not easily afford for in-depth examinations of diversity and diverse individuals. Therefore, this research expands beyond adhering strictly to any of these models in order to examine the relationship between diverse perspectives held by different individuals and groups of stakeholders within video game design work and the selection and use of specific work tools. Panourgias et al. (2014) argue, for example, that "the assumption of a separation

between creativity on the one side and technological development on the other" is not a productive approach to understanding individual agency in video game design work and that researchers should "focus on the intimate tangle of digital systems, objects and people and their co-emergence, co-production, and the mediations amongst them that often subvert conventional disciplinary, organizational, and territorial boundaries" (2014, p. 124). This approach also affords greater opportunity for identifying and understanding individual diversity within the use of work tools in video game design work.

RQ3: How could individuals and organizations actively utilize organizational structure and collaborative work tools to promote inclusion of traditionally underrepresented and marginalized groups?

Previous research indicates that discrepancies continue to affect both the STEM education and the workforce that it feeds into (Aspray, 2016a) and that the area of video game design education and work is certainly no exception to these same issues (Cunningham, 2016). The small body of research specifically into the experiences of individuals from underrepresented groups within video game design indicates that these individuals typically struggle to get their ideas and work recognized unless they are at a high level within their organization or found their own organization (Cunningham, 2016; Hepler, 2016; Johnson, 2013). Simultaneously, research indicates that the systemic use of certain terminology, expressions, or work tools within this field can potentially be confusing, offensive, or even harmful to diverse workers (e.g., Eglash, 2007).

Researchers have not particularly examined, however, how these same areas (organization structure and work tool selection/use) might also be used to better support diversity and diverse individuals. By emphasizing the role of individual agency within this work, I find not only instances of exclusionary practices, but also moments of transformation within the work or the work organization—such as women previously

profiled within the video game design industry have identified (Hepler, 2016). Both exclusionary *and* inclusionary practices involving organization structures and work tool selection and use can provide valuable insight into how individuals and organizations could actively utilize organizational structure and collaborative work tools to promote inclusion of traditionally underrepresented and marginalized groups.

Finally, although I began my review earlier in the chapter by describing the participation of underrepresented and marginalized groups within this and related fields in order to contextualize my discussions of diversity, I intentionally place this research question last within the discussion of my results. While RQ1 and RQ2 were constructed to be primarily descriptive research questions, this research question is inspired by the goals of action research approaches (Herr & Anderson, 2015) and aims to provide some degree of intervention into the field of video game design, in order to better support diversity and diverse individuals. I believe that by first better understanding the structure of video game organizations and these groups' collaborative work tool selection and use, we can more effectively address specific instances of a lack of support (or potential for greater support) for diversity and diverse individuals within this work.

Accordingly, I offer some concrete recommendations in response to RQ3 that can be tied back to the results for RQ1 and RQ2. These recommendations can be used to specifically promote the greater inclusion of underrepresented and marginalized groups, both within the field of collaborative video game design as whole and within the daily work of collaborative design teams. In this sense, a focus on broadening participation of underrepresented and marginalized groups comes simultaneously first and last in considering this research.

In this chapter, I have discussed three starting points where applying the lens of diversity could produce valuable insights for the field of video game design work:

understanding the structure of organizations, understanding collaborative work tool selection and use, and examining the participation of underrepresented and marginalized groups (particularly, but not only, in relation to the first two starting points). I selected these particular aspects based on my review of previous research related to this form of information work, drawing from several different bodies of literature. Although these are only three potential approaches to considering diversity from among many options, I believe that they successfully represent the potential and the need for further research into diversity within collaborative video game design work.

Accordingly, I developed specific research questions to address each of these three aspects within my dissertation research. Each of these questions has important implications both for better understanding the field of collaborative video game design work and for developing the literatures around diversity and this area of work, including the areas of research that I have examined within this chapter. In the following chapter, I next turn to describing my research plan for addressing these questions in more detail.

Chapter 3: Methods

In this chapter, I discuss my research plan for this dissertation, as guided by the three research questions that I have listed in the previous chapter. I first begin by discussing my methodological orientation, including a description of the specific methodologies that have shaped this research. Next, I describe the primary sampling and participation strategies that I employed, along with describing my final participant sample. I then outline the specific data collection and analysis strategies that I used to investigate my research questions within this area. Finally, I conclude by summarizing my approach to ensuring data validity and saturation for this research.

In order to address my research questions with appropriate sensitivity and nuance, I have employed primarily qualitative methods. Additionally, this research, inspired by multi-sited and digital ethnographic approaches, takes an inductive, "bottom-up" approach to understanding diversity within the field of video game design. My methodological orientation therefore both supports and reflects these goals.

3.1: Methodological Orientation

Broadly, this dissertation is inspired by action research approaches (Herr & Anderson, 2015), with the explicit goal of better understanding diversity within collaborative video game design work in order to better support diverse individuals and perspectives within the field. Accordingly, this work is informed by critical race and gender studies—particularly within the area of Feminist Science and Technology Studies (STS). I draw particular inspiration both from Herr and Anderson's (2015) emphasis on participatory research involving research participants (rather than research subjects) and from Haraway's (1992) call to explicitly privilege articulation over representation.

In this section, I discuss how I have adopted versions of the following methodologies for this research: multi-sited ethnography, digital ethnography, and modified grounded theory.

3.1.1: Multi-sited Ethnography

Multi-sited ethnography is an outgrowth of traditional ethnographic methods that attempts to study social phenomena that cannot be accounted for by focusing on a single site (Marcus, 1995). According to Falzon, "the essence of multi-sited research is to follow people, connections, associations, and relationships across space (because they are substantially continuous but spatially non-contiguous)"; this "following" can involve a researcher physically travelling to multiple locations or conceptually linking different sites "by means of techniques of juxtaposition of data" (2016, pp. 1-2). Multi-sited ethnography has recently been adapted beyond the traditional anthropological fields into areas such as Sociology (Carney, 2017; Nadai & Maeder, 2005) and CSCW (Blomberg & Karasti, 2013). Hine argues that multi-sited ethnography offers a valuable "middle-range" methodology for contemporary STS and that "moving around gives us ways to suspend judgment about the appropriate places to study experience and make interventions and the appropriate ways to reproduce methodologies" (2007, p. 669).

3.1.2: Digital Ethnography

Inspired the work of Turkle (2005) and others, sociologists and anthropologists have increasing turned to understanding the role of digital (or virtual) technologies in mediating individuals' and researchers' ways of interacting with the world and themselves (Pink et al., 2016). Employing a digital ethnography method might mean studying people's interactions with technology in real time or trying to understand human

interaction and meaning by monitoring the online traces that they generate (such as blog posts, videos, social media messages, and even social media network analyses).

Although the primary focus and data collection method of this research project is in-person interviews (described in more detail below), it is important to recognize the particular nature of video game design work as being an inherently digital endeavor. In addition to the product of the work itself being completely digital, most (or sometimes all) work coordination and communication is usually conducted through digital mediums. Thus, I approached this research sensitized to the significance of the digital work "environment" and its interactions while speaking with participants. As Murthy argues, "a balanced combination of physical and digital ethnography not only gives researchers a larger and more exciting array of methods to tell social stories, but also enables them to demarginalize the voice of respondents in these accounts" (2008, p. 839). I argue that we must remember that "access to these technologies remains stratified by class, race, and gender of both researchers and respondents," especially when conducting research (such as this dissertation) that particularly aims to understand the experiences of marginalized groups of people (2008, p. 839).

3.1.3: Modified Grounded Theory

Strauss and Corbin define grounded theory as "a qualitative research method that uses a systematic set of procedures to develop an inductively derived grounded theory about a phenomenon" (1998, p. 24). Instead of assuming a set of concepts from the literature and narrowly looking for those concepts in data, grounded theory involves careful analysis of data that seeks to avoid being flavored by the existing literature or preconceived notions. Charmaz emphasizes the role of constructing (rather than discovering) theory and argues that "grounded theory serves as a way to learn about the

worlds we study and a method for developing theories to understand them" and that "we construct our grounded theories through our past and present involvements and interactions with people, perspectives, and research practices" (2006, p. 10).

Although I have primarily analyzed my data inductively using an approach akin to the process of constant comparison of emergent coding within grounded theory, I also believe that it is important to acknowledge some of the previous work that has been done to develop theory relating to understanding and discussing issues of diversity—particularly in the areas of workplace diversity research, critical race theory, and feminist STS. As I described in Chapter 2, I accordingly developed three research questions based on my beginning understanding of the field. Cutcliffe acknowledges that pure Glaserian grounded theory approaches might be difficult to adhere to when there are legitimate reasons to begin a study with a research question, and argues that "by including a non-specific question, the proposed study might constitute a legitimate example of adapting [the] methodology," especially if "the researcher can clarify this by explaining in what way they are using a modified [grounded theory]" (2005, p. 424).

Similarly, Charmaz encourages "flexible guidelines, not methodological rules, recipes, and requirements" in the application of grounded theory and argues that "grounded theory methods can complement other approaches to qualitative data analysis, rather than stand in opposition to them" and that grounded theory methods should be seen as "a set of principles and practices, not as prescriptions or packages" (2006, p. 9). Since I have not followed the methodological approach of grounded theory to the letter, it is therefore perhaps more accurate to describe my data analysis approach as thematic analysis (Braun & Clarke, 2006), with the overall theoretical approach as a type of modified grounded theory (Cutcliffe, 2005).

3.2: SAMPLING/PARTICIPATION PROCESS

All participants in this research must have had some experience in working on a collaborative (i.e., not single-authored) video game design project; any role within the project was allowed and encouraged (e.g., programmer, director, writer, character designer, sound engineer, etc.). Their work may have taken place at any level of organizational scale, including non-paid work. The definition of a "video game" project was deferred to the participants' self-selection into the study and was not substantially discussed during interviews; the technical requirements for a "video game" encompassed many different formats, including: major console (e.g., Nintendo Switch, Sony PlayStation, Microsoft Xbox) releases; PC, Linux, and/or Mac games (including distribution through a number of sources); mobile applications; and web browser-based games.

While I strove to recruit a diverse set of individuals, I did not restrict or actively recruit participants based on any specific personal demographic categories. Additionally, participants did not have to self-identify as a "diverse person" or as a member of an underrepresented group to participate in the study. As indicated by my final sample (described below), individuals from marginalized and underrepresented groups may feel a greater personal motivation to participate in research that examines diversity-related issues—especially if they believe that research may ultimately improve their own work field or personal experience. Accordingly, I welcomed all perspectives while emphasizing those from less-privileged members of the organization, as feminist standpoint epistemologists encourage (Haraway, 1988; Harding, 1986, 2008) in order to best understand the nuances of diversity within this field.

Due to the sensitive nature of the topic, I believe that participants need to feel that their livelihood is secure and that their responses are not tied to any particular "diversity

initiative" within their workplace. Thus, I recruited individual participants primarily through outreach to various professional organizations, conferences, and meetups in my area that are related to video game design work,[33] including organizations that specialize in supporting underrepresented groups within the field.[34] I conducted this outreach both in person and online through social media, over the course of multiple months leading up to the data collection period. I additionally reached out to faculty within my university's game design program who had been involved in a previous, related study (Simons & Fleischmann, 2017) for help with identifying potentially interested alumni of the program. Finally, participants were also encouraged to forward the study information to other potentially interested individuals (snowball sampling), with a preference that these individuals be located within the Austin area.

Despite long-standing industries in areas such as California and Washington, Texas was recently ranked as the second-highest state in the U.S. for video game employment and number of video game design companies (Entertainment Software Association, 2017), with financial incentives from the state even encouraging some organizations to relocate to Texas from other areas (Walters, 2013). As one of the primary centers of this growth, the Austin area was recently ranked fifth in the U.S. for total number of video game design organizations (Entertainment Software Association, 2017) and is home to a rapidly-growing number of organizations comprised of a wide range of sizes and foci, in addition to an active and engaged extramural community.

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[33] These include: Juegos Rancheros (Austin's Independent Games Collective), the Austin chapter of the International Game Developers' Association, The International Autodesk Animation User Group Association - Austin Chapter, the Gaming Expo portion of the South by Southwest convention, the DreamHack gaming convention, North Austin Game Night, and various other social events listed on the Austin Game Dev Calendar. The current organizer/manager of the Austin Game Dev Calendar (among other roles in the community) was particularly helpful in introducing me to potential participants both in person and online.

[34] Including the Austin chapter of Women in Games International and Austin Women in Tech.

3.3: DESCRIPTION OF PARTICIPANTS

Due to the availability of a substantial number of diverse participants within the Austin area, and to minimize the introduction of other variables, I conducted all interviews in-person with individuals who primarily reside in the area.[35] Several participants mentioned that they had previously lived and worked in other areas (particularly in Los Angeles or the Bay Area). Additionally, while many participants currently collaborate with or have collaborated with others who did not live in Austin, most of the collaborators that they discussed were also based in the Austin area.

This study includes the interview data from 20 participants. Participants described having many different current job titles within their organization, including: Senior Game Designer, Lead Creative Designer, Lead Software Engineer, Studio Head, Senior Writer, External Development Manager, Lead Environment Artist, Audio Designer, and Office Manager. Many participants—especially in tiny organizations—described having multiple roles simultaneously within their organization, such as: lead programmer and lead environment artist; programmer and designer; programming, design, and organizing the team; and even programming, audio and sound effects, music, 3D modeling, and 2D artwork. Additionally, nearly all participants discussed having had multiple different roles throughout their career.

The length of time that participants have been involved in game design ranges from about 5 years to almost 25 years professionally, although many participants stressed that they had been designing games for much longer—with many participants discussing being interested in game design since childhood. Similarly, while participants described working on between 1 and about 30 games collaboratively as part of their professional

[35] Although I did not explicitly ask participants if they lived primarily in Austin, I have inferred this based on our discussions of their work organizations, attendance at meetups and other social events, and other factors. Additionally, no one explicitly stated that they did not live in Austin.

career, many discussed working on additional hobby, student, or practice games. Some participants described being a part of more than one design organization, while some participants were members of the same organization, bringing the total number of organizations represented to 19 (I describe the features of these organizations in more detail in Chapter 4).

Unlike these professionally-related qualities, other participant characteristics are based on emerging discussion during the interview process. In other words, while I did ask participants questions about their work history and experience as part of the interview instrument, I did not at any point ask participants questions specifically about how they may identify themselves in relation to demographic groups related to factors such as race/ethnicity, gender, sexuality, religion, or disability status. Because I felt that such demographic questions might be off-putting, limiting, or otherwise inappropriate, I decided to allow issues of personal identity to emerge more organically and in participants' own terms. Accordingly, I only discuss participant demographic categories within this dissertation if a participant (or more than one participant) directly and explicitly mentioned that category during our discussion.

In total, 8 participants did not self-identify as being part of any underrepresented or marginalized group. Many of these participants referred to themselves as "white men" or "straight white men" when referencing their own personal perspective or demographic identities. Of the other 12 participants, 7 self-identify as women (including 2 self-identified trans women) and 1 as non-binary. Overall, many participants described themselves as "white," with 2 participants self-identifying as Asian or Asian American, and another 3 self-identifying as unspecified "not white." Additionally, 1 participant self-identifies as Jewish. Another 1 participant identifies as being on the autism spectrum.

Finally, a total of 4 participants additionally discussed being part of the LGBQ+ community.

I have compiled this emergent demographic description both to give some sense of the diversity of participants—which I have tried to maximize as best as possible without specifically asking for or about demographic identity—and to indicate the extent to which participants felt that these identities were relevant enough to their own experiences within the field of game design to be worth mentioning. While this description is clearly lacking in representation of significant demographic groups, it does represent a more diverse group than the video game design industry at large. Finally, it is important to note that these categories may be intersectional, with some individuals claiming multiple relevant identity categories.

3.4: Data Collection

As mentioned above, the primary form of data collection for this study was semi-structured interviews with individual participants. These interviews focused on examining the three main areas outlined in Chapter 2, with a particular focus on using a modified form of critical incident technique (Flanagan, 1954) to draw out specific instances related to diversity in their experiences of collaborative video game design work. I asked participants to describe basic features of their work history and path into the field, their organizational structure and workflow, their collaborative tool selection and usage, and their most recent day of work. I also asked participants to describe their personal experience working "with individuals from diverse backgrounds, identities, perspectives, and experiences within the field of game design," as well as a specific example of "an instance in which [they] felt issues related to diversity or moments of difference became significant or particularly noticeable during that work." After these

questions, I then asked them to describe examples of support (or lack of support) for diversity within their organizations and to provide any suggestions for improving diversity within their organization and the field more generally. Lastly, I asked participants to describe how collaborative work tools and organizational structure may be related to diversity within participants' work. The semi-structured interview instrument is composed of a fixed set of open-ended questions on these topics, with direct follow-up questions asked as necessary. (Please refer to Appendix A: Interview Instrument for the full list of questions.) This instrument was additionally piloted with one individual (not included in the final participant data) who had participated in at least one collaborative video game project.

During the recruitment process, I asked potential participants to provide approximately two hours of their time, preferably in a face-to-face interview format. Initial recruitment materials also clearly stated the subject of this research (diversity in collaborative video game design), as well as some of the intended outcomes of the research. I then encouraged interested participants to select a neutral, semi-public location in which they felt comfortable for the interview process (such as my office on campus, or a local coffee shop), particularly considering that they may be discussing some sensitive issues related to their personal experiences or to their work-related tasks. I also encouraged participants to bring a laptop or other digital device with the collaborative tools that they use during their work (if possible), so that they might be able to reference these devices to potentially contextualize any examples that came up during the interview. Finally, I informed all participants that they would have the choice whether to receive named credit for their contributions to this research or to remain anonymous,[36]

[36] Participants were asked for their preference before any data collection, and again after data analysis was complete and before publication.

and that any other individuals or organizations discussed would be anonymized. I additionally informed participants that they would be given an opportunity to review their contributions to the study before final publication, thereby hopefully giving them both a sense of ownership and control of this research.[37]

To recruit participants for this study, I additionally emphasized the potential benefits of my research for both the individual participants and for the larger communities that they identify with—particularly the game design field. These potential benefits include visibility and validation for the work of video game design, which has not been well studied (Simons, 2016) and may not be well understood by other relevant groups of stakeholders (including other ICT designers, educators, and the users of the games themselves). I additionally informed them that I intended to produce actionable suggestions for better supporting diversity within the field that may be applied both by individuals (including participants themselves) and by game design organizations; these suggestions and the research findings will be shared with all participants.

I did not conduct any interviews within the main work area of participants' employers (even if such an area existed). Flexibility in interview sites allowed for easier recruitment of participants—for instance, participants did not have to obtain permission from employers to use the space, and participants may have felt safer to share their thoughts in a space of their choosing—and this approach to ethnography within the video game design field is in line with a multi-sited approach that focuses on "a concept of the field as social world(s) constituted by a set of actors focused on a common concern"

[37] All participants (both named and anonymous) were sent excerpts from the near-final draft of this dissertation containing all of their direct quotations and some context of how those quotations were discussed and encouraged to "please let me know if you feel that I have severely misinterpreted your words so that we can work together to create a better understanding." A few participants asked for minor modifications specifically to the text of their quotations for clarification purposes or to correct typos and I accommodated all of these requests—I did not feel that any such modifications altered my interpretation of their contributions or required any other changes within the larger document.

(Nadai & Maeder, 2005, p. 1). Additionally, my approach emphasizes the importance of digital ethnography for understanding the participants' necessary engagement with the "virtual" worlds and communities involved in their work, especially when that work is conducted completely through remote and virtual means.

All interviews were audio-recorded (with the permission of the participant) using my personal (encrypted and password-protected) mobile phone. Whenever possible, I encouraged participants who brought a digital device to the interview to share with me examples of their use of a collaborative work tool, as prompted by our discussion. I then asked them to "think aloud" or walk through these examples while relating them to the content of the interview, using a modified form of contextual inquiry (Holtzblatt & Jones, 1993). The main focus of using these examples was to contextualize the content of the interviews, however, rather than to be independently analyzed as digital traces or documents.

The final interviews ranged between 57 minutes and 149 minutes in length, with most interviews lasting over 100 minutes. A first round of 16 interviews was conducted between May and July of 2018 and analyzed over the next several months. In order to both ensure saturation and to secure as diverse a participant sample as possible, a second (and more select) round of 4 interviews was conducted between March and May of 2019.[38]

[38] Although there were several months between these rounds of data collection, I have no reason to believe that any significant external factors changed during this time. This assertion is based both on my own assessment of the climate of the field and on the fact that no significant codes emerged in the second round that indicated such differences.

3.5: DATA ANALYSIS

I analyzed all interview data using an iterative process of thematic analysis (Braun & Clarke, 2006), guided by my modified grounded theory approach. My analysis followed the six-stage process[39] that Braun and Clarke lay out, in which "analysis involves a constant moving back and forward between the entire data set, the coded extracts of data that you are analysing, and the analysis of the data that you are producing" (2006, p. 86). They additionally argue that writing should be "an integral part of analysis, not something that takes place at the end," and should begin in the first stage of analysis "with the jotting down of ideas and potential coding schemes, and continue right through the entire coding/analysis process" (2006, p. 86). Finally, I followed their precepts that "qualitative analysis guidelines are exactly that: they are not rules, and, following the basic precepts, will need to be applied flexibly to fit the research questions and data" and that analysis is a "recursive process, where movement is back and forth as needed, throughout the phases" (2006, p. 86).

I therefore first complied complete transcripts of all audio recordings, using the qualitative date analysis software tool NVIVO to help link the transcription[40] to the interview audio and to my notes and coding of the transcript. I coded each participant as a "participant" case within NVIVO and assigned attributes (based on explicit categories such as those in Table 1, and emerging categories such as those in Table 2), allowing me to perform some simple comparisons between participant cases.[41] Each organization that

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[39] The six stages that they lay out here are: familiarizing yourself with your data, generating initial codes, searching for themes, reviewing themes, defining and naming themes, and producing the report (Braun & Clarke, 2006)

[40] The final transcripts do not capture participants' words verbatim, in that they generally do not include excessive "fillers" (such as "um," "yeah," "uh," and "right?") and have been lightly edited to more resemble complete sentences. I did leave in some pauses and "filler" phrases where I felt these captured something more significant about a participant's thought process.

[41] After considering the sensitive nature of these interviews and the potential career ramifications for participants, I have decided not to share complete participant case profiles here in the final results in order

participants described was also coded as an "organization" case and assigned attributes through a similar process. (Please refer to Appendix B: Organization Case Attributes for a complete list of these attributes.)

Next, I added any notes taken during or after the interview to this data and used these notes to help inform preliminary orientations towards emerging codes. I next conducted an iterative coding process (Braun & Clarke, 2006; Charmaz, 2006) using the interview transcript data, beginning with making detailed notes based on the transcripts, closely followed by generating initial codes within the data. I additionally employed the method of memo-writing to assist me in analyzing my data and codes early—and throughout—the research process (Charmaz, 2006). Charmaz argues that memos help "catch thoughts," make "comparisons and connections," and "crystallize questions and directions" (2006, p. 72). I then iteratively refined these initial codes into a more finalized set of codes that were, ultimately, used to construct emerging themes.

As Braun and Clarke assert, while "a theme captures something important about the data in relation to the research question and represents some level of patterned response or meaning within the data set," there are no specific quantitative guidelines to determining "what counts as a pattern/theme" or what "size" a theme needs to be in this type of qualitative analysis (2006, p. 82). Instead, "researcher judgement is necessary to determine what a theme is," as the "'keyness' of a theme is not necessarily dependent on quantifiable measures" and "part of the flexibility of thematic analysis is that it allows you to determine themes (and prevalence) in a number of ways" (2006, pp. 82-83). They additionally note that there are accordingly "various 'conventions' for representing

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to better protect anonymous participants. I have also chosen not to use any kind of pseudonyms for anonymous participants for similar reasons and to make connecting their quotations into a single profile more difficult. While I understand that this is still not a perfect anonymization strategy, I do feel that this approach appropriately represents participants' expectations and preferences.

prevalence in thematic (and other qualitative) analysis that does not provide a quantified measure," including using relative descriptors such as "many" or "most," which work "rhetorically" to suggest a theme really existed in the data—although this approach is also not without flaws (2006, p. 83). In my analysis, I have chosen to use a combination of both "light" quantification[42] and relative descriptors to discuss the prevalence of themes throughout this data. All cases of indication of prevalence—including uses of numeric counts—should be considered illustrative and rhetorical rather than absolute or statistically significant.

Finally, while I approached this analysis through a familiarity with relevant previous research and theory, I focused on allowing emerging themes to develop inductively, rather than on "forcing a fit" into the final theory development (Cutcliffe, 2005). While this approach does not fit with a strict grounded theory method, the thematic analysis method acknowledges that "engagement with the literature can enhance your analysis by sensitizing you to more subtle features of the data" (Braun & Clarke, 2006, p. 86). The final stage of this research required me to go beyond the descriptive level of presenting these refined themes into the level of a more "abstract theoretical understanding" (Charmaz, 2006, p. 4), as "the most illuminating qualitative findings go far further than description: they interpret, they explain; they solve problems" (Cutcliffe & McKenna, 2004, p. 130). My finalized themes and their theoretical implications are presented throughout the remaining chapters of this dissertation.

[42] I have only used specific numerical counts to describe themes or sub-themes in cases where I believe their use to be both particularly illustrative and non-revealing of anonymous participants. As I discuss in Chapter 4, participants do not directly map one-to-one to an organization and I have intentionally left some ambiguity in the number of participants who fall into each organizational size category to aid in maintaining participant anonymity. Accordingly, in some cases, providing exact counts would be more revealing of the participants' profiles than in other cases.

3.6: DATA VALIDITY AND SATURATION

Braun and Clarke outline a 15-point checklist of criteria to consider when evaluating the quality of your own thematic analysis, including criteria involved in the processes of transcription, coding, analysis, and writing the report (2006, p. 96). I have accordingly followed their checklist through each stage of this research to the best of my ability. Additionally, in line with my overall modified grounded theory approach, evaluation of my data validity primarily also focuses on the concept of data saturation and—to a lesser extent—adequate sampling size. Although the in-depth nature of this work does not necessarily require a very large sample size (compared to more quantitative methods), I still needed to secure an adequate number of participants to be sure that I have indeed gathered enough new findings to appropriately address each of my research questions. Charmaz (2006), however, argues that the saturation point of theoretical categories in qualitative research using a grounded theory approach should also be considered within the scale of the study and of the claims being made—and that sample sizes can accordingly scale with these concerns, allowing for smaller sample sizes where these concerns are met.

During my iterative data analysis process, I constantly considered the issue of saturation and the validation of emerging themes. By the end of the first round of interviews, the number of new codes that I was generating had significantly declined., which is commonly considered to be a first sign of approaching data saturation (Charmaz, 2006). When moving to the more abstract level of theory-building, Charmaz argues that "categories are 'saturated' when gathering fresh data no longer sparks new theoretical insights, nor reveals new properties of your core theoretical categories" (2006, p. 113); I additionally reached this level of saturation after analyzing the second round of interviews.

Finally, in accordance with my overall research approach, my primary evaluation metric for my work has been to assess whether the study has generated new and meaningful knowledge. This knowledge should lead to theory-building that can be successfully applied to ongoing research in the areas of workforce diversity, collaborative video game design work, and computer-supported cooperative work. I believe that the implications of this research should indeed raise significant attention to the issue of diversity in game design work and, further, should provide actionable suggestions for supporting diversity within the field. Thus, individuals and organizations within the video game design industry should be able to apply the theoretical contributions of my work in an empowering way to making organizations more sensitive to diversity, to increasing diversity within the workforce, and to making the daily work environment more hospitable to individuals with diverse backgrounds and abilities in multiple aspects—particularly individuals from underrepresented and marginalized groups.

CHAPTER SUMMARY

In this chapter, I have outlined my qualitative research approach, including identifying the primary methodologies that have shaped this research. I have also described the demographics of my participants and the sampling strategies that I employed to recruit them from the collaborative video game design field. I then outlined the specific data collection and analysis strategies that I used to investigate my research questions by using in-depth, semi-structured interviews to examine the three main areas that I describe in Chapter 2. Finally, I concluded this chapter by describing my approach to ensuring data saturation and validity.

In the next three chapters, I describe significant findings related to each of my three research questions, beginning with results focused on organizational structure and diversity.

Chapter 4: Organizational Structure and Diversity

This chapter discusses my findings related to RQ1, which focuses on understanding the relationship between organizational structure and diversity within collaborative video game design work. First, I give an overview of participants' video game design organizations. I then discuss significant features of the organizational structures described by my participants, as well as how participants relate those features to aspects of diversity within their work. The majority of this chapter accordingly focuses on discussing each structural feature in detail.

4.1: Overview of Participants' Organizations

In total, participants discussed 19 different distinct organizations. Some organizations include multiple participants (the highest number of participants in the same organization is 4), while some participants discussed multiple organizations (the highest number of organizations that a single participant discussed is 3). While many participants mentioned multiple previous organizations, I have focused only on the current or most recent organization(s) that were discussed at length. Please see Appendix C for a breakdown of each organization's attributes, based on participants' descriptions of their organizations.[43]

As mentioned in Chapter 2, I have identified several salient features of organizational structure that were discussed by participants as impacting their daily work

[43] I did not do any outside research on these organizations other than what was discussed in the interviews, and thus these profiles should not be considered complete or necessarily representative of how the organization would formally describe itself. While many participants referred to their organizations specifically by name, some did not (either to keep the organization anonymous or because it did not have a formal name). I have chosen to use pseudonyms for all organizations in their complete profiles and to avoid directly linking participants to their organization in order to make it harder to identify the anonymous organizations. Of course, I realize that some linkage will still be possible.

and that can be related to diversity within their organization. Each of the remaining sections of this chapter accordingly focuses on discussing each structural feature in detail.

4.2: SIZE

I define size here as the number of members that participants identified as being part of their organization(s). Following the assertion that the "number of employees correlates more strongly than other indicators with structural features" (Kottke & Pelletier, 2017, p. 1144), I also use size as a starting point for describing organizations and frequently relate this feature to the other features discussed throughout the rest of this chapter.

In this section, I first discuss how I developed my categories of size and then explain why the feature of size is particularly salient to discussing participants' video game design organizations. Finally, I discuss in more detail how participants discussed the size(s) of their own organizations.

4.2.1: Developing the Categories of Size

As I discussed in Chapter 2, there currently is little consensus about how to categorize the size of video game design organizations, particularly in terms of number of members. Considering that "only a handful of AAA game publishers employ more than 500 employees and are considered major corporations," while 99.7% of American-based game companies employ fewer than 500 employees and 91.4% employ fewer than 30 employees, I believe that a finer-grained approach to understanding the under-500 category and under-30 category of "small businesses"[44] would be particularly useful

[44] The number 30 is set by the Small Business Administration as defining a "small business," not specifically based on previous research on video game organizations (Entertainment Software Association, 2017, p. 15).

(Entertainment Software Association, 2017, p. 15). Since all of my profiled organizations employ fewer than 500 people, and 14 out of 19 employ fewer than 30 individuals, I similarly focus on understanding how to best classify these "non-major" organizations.

After analyzing all of the significant features of organization structure discussed by participants and compiling the initial organization profiles, I inductively developed a system for classifying the sizes of participants' organizations. I was partially inspired by Caplow's system for classifying organizational size "based on a criterion of interaction possibilities" (1957, p. 486), particularly as related to the structural feature of coordination and to the nature of communication within participants' organizations. As I discuss in more detail in Chapter 5 (Collaborative Work Tools and Diversity), coordination is also one of the most important features of collaborative tool usage and thus is frequently shaped by the size of the organization.

Generally, I have adapted Caplow's idea of the two-part "small" group[45] and divided it into two distinct new sizes: tiny (2-5 people) and small (6-15 people). I then modified and scaled down the remaining categories[46] to fit the sizes and features of participants' organizations, resulting in medium (16-50 people), large (51-150 people), and very large (151+ people).[47] The final classification of participants' organizations includes 11 tiny organizations, 1 tiny-small organization (where size varies based on current contracts), 2 small organizations, 4 large organizations, and 1 very large organization. Although I do not identify any organizations as being within the "medium" category, I have decided to retain the category; future work with organizations of

[45] These are "primary groups" in which each member interacts individually with every other member (from 2 to about 20 individuals), and "non-primary groups" (from 3 to about 100 individuals).

[46] Caplow's (1957) categories are: medium groups (ranging from about 50 to perhaps 1,000 members); large groups (ranging from about 1,000 to perhaps 10,000 members); and giant groups (anything over approximately 10,000 members).

[47] Although not covered in my sample here, an additional category of "giant" could conceivably be added for the approximately .3% of video game design organizations that employ over 500 people.

approximately 16-50 people would likely help to determine whether this category should remain separate, be combined with either the "small" or "large" category, or simply not exist.[48]

4.2.2: Why Size Matters

Each of the other features discussed below is related in some way to the size of the organization, which helped me to determine appropriate cut-offs for each size category. For example, participants in organizations with 5 or fewer members (at least 10 out of 19 total organizations—and perhaps more, due to periods of fluctuation) generally have few formalized decision-making processes and described a flat and/or networked model of coordination (as opposed to a hierarchical bureaucracy). In tiny organizations, participants also frequently discussed how the addition of even a single future member would have significant implications both for the organization and for the game(s) being developed. For example, one participant discussed the pros and cons of adding another member to the organization at this point in the project development:

> Everyone in our team right now works pretty well together. We have several different dynamics where different people work together and it's pretty tight-knit. As you grow, especially as you grow beyond five, you face a lot of challenges, because it's when those growing pains really start to hit.
>
> If there is one role that I would really say it would be worth the risk to—because, you know, right now we have a working thing and we can take this unit that we have and complete the game and that would be stellar, because that's the goal, right?—But if there is one person that I would really like to bring on and afford that risk, it would be potentially bringing on a sixth member for a dedicated composer for music. Which is one of the reasons we want funding is because

[48] None of the organizations discussed are between the size of 16 people and about 50 people; I am unable to determine whether this is due to unrepresentative sampling or whether it is truly a feature of how such organizations develop and scale. I feel that while there are clear differences between features of organizations in the small and the large category, and between the tiny and the small category, the sizes of the organizations in this sample did not allow me to meaningfully determine the features of organizations who might fall in between the small and large organizations.

> music is one of those things that—we don't have a strong skillset in music on our team right now, and it could really help sell and augment the experience that we're currently creating. (Mitchell Garrett)

In this case, a decision to grow the size of the organization would be affected not only by the structural pros and cons of integrating a new member, but also by the desire to financially support any future members up front.

In total, 6 participants similarly discussed how adding any additional members to their tiny organization would significantly affect task divisions, mechanisms of coordination, or both. One of these participants additionally suggested that simply increasing the size could have an effect on better supporting diversity within the organization:

> I wish we had more people. I think that it is particularly difficult with three people in that there can be that feeling of ganging up if two people agree and one person doesn't. And having any sort of diversity would also contribute to the management issue in that we could start assigning people to specific lead roles, for instance. (Robyn Haley)

Similarly, another participant from a tiny organization described hoping to better support diversity within the group by adding at least one more member:

> I do think, ideally, I would like more viewpoints. And one of my friends who was going to work with me—but he got a job at [a large technology company], so he's like, "I'm really busy"—you know, he's African American, and I was like, "That would be cool to have you giving me some other perspectives." But this kind of just didn't work out. The one nice thing is my music collaborator—she's actually a queer woman, and she's white—but she has a friend who's studying Mongolian music. She is a music ethnologist. So, it's kind of cool because she can put me in touch with this [other] woman. (Sarah Abraham)

While several participants from organizations of different sizes discussed the impact that gaining even one member from an underrepresented or marginalized group might have on the diversity of their organization (which I describe in more detail later in this chapter),

participants in tiny organizations seem especially aware of the effect of size within their organization in terms of diversity.

In small organizations, in contrast, participants discussed challenges of size as related to being able to *theoretically* interact with every member of the organization, yet often finding that structural barriers (such as divisions into teams and top-down decision-making processes) prevent them from meaningfully doing so. For example, one participant discussed feeling that various "hypocrisies" in the design process "could be deeply frustrating not only just myself but other people on the team," adding that:

> For a smaller team, 15 people […] when we were trying to figure out what kind of game we wanted to make, they opened it up to everybody at the company. And with that egalitarian mindset, you would hope that everybody's voice at least had somewhat similar weight. But at the end of the day, it ended up being one of the partners who made the decision on what we were making. Even though it was kind of sold to us like, "Well, we're just going to see where this goes and then we'll consider some other ideas." Well, no.

Another participant from a small organization similarly described a mix of benefits and drawbacks of being able to work with most (or all) of the organization, particularly in terms of communication and decision-making:

> Our studio's so small; we all spend a lot of time together. And so, we try to keep communication open, even with the higher-up head of the studio. And, yeah, he's very good about if he wants us to do something and we don't understand why, he will at least try to explain it. And sometimes, we'll disagree even after he explains it, but at least he explained it. […] I mean, it still sucks that if a higher-up feels strongly enough about something, that there's just nothing for it. But that goes into office politics a bit. If there was a process for overriding, for vetoing a decision like that, what would that look like? How could we make it powerful enough to be useful but at the same time not— Because we do need to be able to get things done. And we couldn't just veto everything. I don't think that we really would, but I don't know. How do we avoid gridlock? And how do we avoid hurt feelings and stuff? Because we all have to work together all the time. We've got to get along and that's important too. So, I don't really know a solution to that. But it would be cool if someone thought of one [laughter].

These examples highlight how the structural features of small organizations may struggle to simultaneously accommodate both the desire for a high level of interconnected communication across the organization and a desire to centralize work tasks and decision making.

Participants in large and very large organizations, however, generally treat the team divisions and hierarchical coordination of their organizations as an accepted fact. Discussions related to size and these other factors more often focused on inter-team or inter-role differences and communication. Several participants also expressed an awareness (but not particularly concern) that they were not always familiar with the tasks or even the members from other teams within their large or very large organization, as did this participant from a large organization:

> So, geez, it's hard to—because there's so many people that do things that I'm not sure of—but I would say at least 50 that just touch the game or affect the project in some way. [Including] through advertising or business decisions or hiring decisions like, "We need more people," some of that kind of stuff.

Another participant from a large organization was particularly concerned about the communication and "culture" between teams, especially considering the potential continued growth of the organization of up to double its current size:

> I know the exact numbers at our studio. We're 44 in development and 33—no, no, no, 32—in support and shared services. On the development side, it's— right now we're kind of front-forward on front- and back-end engineering and then we have some artists that are helping out with one of our other games that's actually being developed in Vancouver right now. […] I have to know the headcount of everybody. I've been doing a lot of weird statistics with participation for events and stuff. […] Because we have two very distinct cultures going on in the office. Our CEO actually came by recently and he was like, "It feels like we still have two offices going on here." Because the development studio here is actually pretty new. […] And the customer service team has been there since 2012. A lot of those people are long-term employees. So, it's two very different cultural feels.

He later elaborated on some of the differences between the two teams:

> You've got a younger audience versus an older audience and then also socioeconomically it's very different. The people on one side of the office get paid much, much more because they're in development. […] Most of our developers, right now, are older.

When discussing a relevant example of diversity within his work, he again addressed some aspects of this divide:

> So, let's see, we have 3 openly gay men in the office, and then we have 8 or 9 openly bisexual people in the office. One of the gay men, he works right now in customer service, and he has a big rainbow flag above his desk. He's been trying to get into the art department for a while […] and when he finally gets legitimized on the art side, they're going to full-time hire him. […] When they finally move him over there— The other gay man that was in the office came over to talk to him about it, and he was like, "So when you move, are you taking your flag with you?" and he said, "No, I've got other people on the team that can help represent the flag." And [the other man] was like, "but you're the only gay man on the team," and it was like, "but they're also part of the LGBT group as well. They're bisexual." And it was really weird to hear that interaction happen because, especially, the man that came over to talk to him, he's like 22.

When I asked if this might be related to the divide between teams, he clarified:

> It seems very different when it comes to sexual orientation. If anybody on the dev side is gay, [then] no one's talking about it, or they've just decided not to divulge that information. I don't know if that means they want to hide from it or they've just decided it's not anybody's business—and either one is fine—but if they decided to hide it, I feel kind of sad.

As these examples demonstrate, the size of large and very large organizations has a particularly close relationship to the coordination mechanisms and decision-making processes that such organizations develop to connect the work and the larger identity of their members. Additionally, participants' ability to easily determine the size of their organization is related to the size of the organization.

4.2.3: Determining the Size of the Organization

When asked, "How many people were involved in your current or most recent collaborative game design project, including in both your immediate work team and the

larger organization (if applicable)?" (Q7), participants from tiny and small organizations could more readily identify precise numbers of individuals involved (as opposed to estimates) than those in larger organizations. In tiny organizations with a structure closer to a network model (6 out of 11 organizations), however, participants often indicated that they were not sure whether certain individuals should be included in their final count.

While most of the tiny organizations consist of 1-3 "core" members, participants generally include other members within their total count. For example, this participant identified 2 core members, and then another 2 (or 3) additional members:

> Our skill sets sort of cover everything—well, not everything, that's actually kind of the specific point I'm getting at. So, it's mostly the two of us sort of accidentally overlapping really well, and then […] there are a couple things here and there that we can't do, either because we don't have the skills, or because we don't have the time or ability. […] We had one person who did some character artwork […] and then another person who's helping us with sound, and of course, play-testing out to random people and such, things like that. And then we actually bought some music, because we needed it for the demo, but we didn't have anyone to do it, or the time to do it ourselves—time and skill to do it ourselves. […] We tried that, and we just did not—it did not work [laughter].
>
> So altogether, if you don't count the person who made the music, I would say about four, all told. If you do, then it would, technically, be five, but I don't think that person even knows the project exists, because it was just, "Here's some music for sale." (Jonathan Kittell-Queller)

Another participant, the president of an independent development company, similarly described an extended network in a tiny organization that includes contractors and unofficial consultants:

> So, it's indie development, so it's a little bit different, but I'm currently working with a musician, probably [also] the sound designer, [but] maybe not. That's sort of new to her, but she's interested in wanting to do that. I have a co-designer. I have two artists who are just sort of helping out, and we're going to probably do a little bit more collaboratively very soon. And then, over the years, I've sort of contracted with various artists for sort of placeholder assets—more students. So, it was a way to help students get an internship and get some work. But the core

> team is more going to be, either sharing royalties, or—which I mean, there's not actually not a lot of profit in indie development, honestly—but that would be model. Whereas with contractors, it's just pay-per-hour and that kind of thing. […] And kind of a sixth person who's on and off because they're a programmer that I sometimes just talk to collaboratively. But, yeah, I would say five core. (Sarah Abraham)

The most extreme fluctuation in determining the number of organization members is in the tiny-small organization, in which the founder and studio head of the organization clarified that being able to secure specific contracts was the first step to creating the organization:

> And that was kind of what kickstarted my company—being able to call it a company, as opposed to just me making games that I wanted to make [laughter]. And so, I was bringing in money to the company, and then I was also using that money to bring in more team members to the studio. […] It's been kind of a rotating team, but seven people have worked on the project at different times; the most we had at once, I think, was four. And so, it kind of fluctuates since it's a small project, and some people work for bigger, larger studios.
>
> […] Then there's also the couple that is orchestrating this, the ones that approached me. And they are working with a couple of different advisors, I think. So, they are working actually with another company that's doing their testing because this is a kids' product. […] They have a technical advisor, I think, and then they have […] a publisher consulting for it for the children's story aspects of it. And then they also have some illustrators.
>
> So, the whole extended team, I'm guessing, is probably at least 15. So, I manage about half of the team, the ones specifically focused on the development in Unity. Which, it is actually really interesting, orchestrating a chunk of what is a larger vision. Because, normally, [with] the passion projects that I work on, I'm used to having the entire vision and I can control all the little moving pieces. (MJ Johns)

As seen in these examples, difficulty in defining the exact size of tiny organizations is often related to some ambiguity in defining the borders of members in an extended network of the organization (including contractors, as in a nonemployer model) or to more temporally-limited involvement of certain members (usually due to the nature of their role in the project).

In larger organizations, participants' challenges in defining the size of their organization are more often due to the divisions between teams working on different games or in different job roles. For example, one participant working at a small organization described the project-focused nature of defining the size of her organization and the teams within it:

> So, my day job [is at a larger] game studio, but it is made up of, like, sub-studios. And I'm in one of those sub-studios, and I provide all of the audio for this one sub-studio. And that sub-studio is like 12 people but typically it's not going to be all 12 people working on an individual game. It will be much closer to like 8. Maybe more if it's like a bigger game—like I worked on [an external media franchise] game [laughter], which is not a title I thought I would work with but here we are. And that team was like—oh, that was over 10 people. That was closer to 12 people, or something like that. And there were people being switched out all the time, like, "Oh, but we need to borrow this team's programmer," and, "Oh, this artist is missing. Let's get this other artist." So, it largely depends on the size of the game. A lot of games I work on are a six-to-eight-person team, but sometimes they're much bigger.

Another participant from a very large organization discussed the difficulty in counting between the different game design teams:

> Our organization within [the larger parent company] has several games running, and I don't actually know the number. I would guess there's probably a couple hundred people in our org as a whole. On our team with artists, designers, programmers, project managers, and producers—I would guess between 40 to 45 people, probably. […] Some of whom may have duties on other games, as well. But that's a guess. (Thomas Jung)

Additionally, this very large organization has teams in several geographic locations, which may add to the difficulty in determining its exact size. One notable exception was the participant mentioned above, who was able to discuss the exact numbers of his large organization particularly because understanding size-related features of the organizational structure is an important part of his role as Office Manager, including both physical building issues and staff-related issues. In general, however, participants were more

focused on the size of the group(s) that they had the most direct and frequent communication with as subsets of their organization.

The size of the organization is accordingly related to each of the other structural factors listed below and their relationship to diversity, including having a significant effect on task division and allocation within the organization. In the following sections, therefore, I also relate the size of each organization to my discussion of other salient features.

4.3: TASK DIVISION AND ALLOCATION

All participants discussed several aspects of task division and allocation within their organization(s). The extent to which both job roles and task assignments are specialized within these organizations varies and is particularly related to both the organization size and the general model of the organization. In this section, I discuss several aspects of task division and allocations with participants' organizations in more detail, including: divisions in job roles and task assignments; gaps, duplications, and differences in work division, and the tension between clarity and creativity in task assignment. I additionally highlight some examples of where participants related task division and allocation within their organization to aspects of diversity.

4.3.1: Divisions in Job Roles and Task Assignments

Organizations that predominantly employ a strong division of labor, with clear compartmentalization into departments, may be understood as primarily bureaucratic organizations. All small, large, and very large organizations employ a compartmentalized structure of job roles and/or tasks to some extent; participants described these role-related compartments as both "departments" and "teams." The most commonly described

departments/teams[49] by participants from organizations larger than "tiny" include: art (10 participants), engineering/programming (10 participants), design (9 participants), quality assurance/QA (6 participants), audio/sound (4 participants), development (4 participants), human resources (3 participants), writing (3 participants), animation (3 participants), marketing (3 participants), live operations/operations (2 participants), production (2 participants) and customer service (2 participants). Individual participants from this group also mentioned law departments, IT departments, finance departments, facilities departments, environment teams, combat teams, level design teams, creative groups, user interface/UI groups, and management teams.

Within these compartmentalized bureaucratic structures, communication about work tasks happens primarily within departments (or teams), and communication across departments is "mostly through managers or through meetings curated by managers" (Spinuzzi, 2015, p. 22) or team leads. In total, 7 participants discussed the importance of their "team lead" in facilitating work discussions and decisions across departments. One participant from a very large organization expressed some concern at the lack of communication between departments—especially as projects are developed and sustained over time—with the exception of coordinating with another team lead:

> [I don't really talk to the designers] other than to say, "Hey, what's this supposed to be like?" Or, "Hey, the document that you wrote is a little confusing." The current lead designer and I have done a lot of work—intentional work—to make sure that it's more collaborative. […] [So, he said] "Okay, a week before we do our internal kick-off, I'm going to put my work-in-progress documents in a public place for everyone to review, and please share your ideas and thoughts. Let me know if this is a good idea. Let me know if you guys can remember a point where this worked, or it didn't." So, he's really opened that door, and so it's changed. I've been much more welcoming to his artistic feedback, sort of as a return gesture. And so, he and I have been sort of— We've been making an effort to not

[49] Here I only include departments, groups, or teams specifically—not just any reference to the job role or job title in this area of work.

> let that collaboration fall away, because historically, any time the disciplines collaborate more, you get a more successful work. Always. (Thomas Jung)

When I asked, "So it sounds like you're intentionally working with the lead designer. Is that the only case, or how about with programming or anything like that," he replied:

> Programming is very separate. […] Yeah. It's very, very separate. And I haven't really dug into why that is. Generally, in games I have found that the level of interaction between art and programming is usually a lot less than the level of interaction between art and design. Game design, I should clarify. But again, I think that that collaboration is probably a lot more robust in new game development, because the artists are usually a more integral part of finding answers to technical problems. If they're trying to innovate, or if they're trying to modify an existing engine to do something that it wasn't necessarily designed to do, and the programmer suddenly finds themselves in a place where they really need the input of an artist. And that back and forth tends to be a lot more robust in new game development, or experimental game development. (Thomas Jung)

As indicated in this example, divisions between the art and programming departments are particularly noticeable to participants—especially in more long-standing organizations.

While participants discussed a lack of direct communication (other than some coordination between leads) between several departments, the division between art and programming was discussed with the greatest frequency (3 participants explicitly, and another 2 more indirectly). Another participant additionally discussed the importance of a specific job role within his small organization that is intended to serve as a liaison between two departments. When I specifically asked if he ever interacted with the programming department, he replied:

> Rarely. […] Usually it's like asking for something to do with a shader, but very rarely, so—[…] We've got a technical artist who kind of bridges that gap and he does a lot more of it for us than I ever really have to. Usually it's me going over there and being like, "Can you have a shader that makes fur?" [And he'll say,] "But it's a mobile device! Don't hurt me." And I'm like, "But could you?" And he's like, "Technically, yes, but nothing else would run." […] If I'm having an issue, especially with the implementation of art assets, I'll generally hit him up first, and then if it's a greater problem than that, or some kind of error message on our source control, or something—*then* I'll go hit up a programmer and be like,

> "Hi, I broke it again," [laughter] and they'll be like, "[long sigh]," and go over there and fix it.

This kind of liaison job role, however, is rather unique in participants' discussions—participants in organizations larger than "tiny" generally discussed these responsibilities in relation to team lead (or manager) positions. Although a few participants in tiny organizations use the term "lead" or "head" to describe their job role within the organization, their position rarely implies responsibility specifically for communicating between departments or roles.

While the size of tiny organizations prevents any of them from having strict "departmental" divisions, these organizations do vary somewhat in the degree to which members are assigned strictly-defined tasks and clear job roles. Some participants described their own role and the role of others with the organization as having clear boundaries. For example, the president of a tiny organization described her roles within the organization clearly in relation to the other members:

> I'm the programmer and designer. So those are the hats that I feel most comfortable wearing. I've put in sort of placeholder art assets […] but I mostly rely on artists and outside people to do that kind of role. But I usually do—because I *can* program and because I *can* do design. Although—maybe this will come up later—but I feel like design is better done collaboratively anyway, and probably honestly programming, but that's expensive. […] I'm currently working with a musician, probably [also] the sound designer […] I have a co-designer. I have two artists who are just sort of helping out, and we're going to probably do a little bit more collaboratively very soon. And then, over the years, I've sort of contracted with various artists. (Sarah Abraham)

Similarly, a participant who had been recruited to her tiny organization specifically for her skillset was able to clearly define the roles on the project, especially her own tasks:

> So, it's me, that artist I mentioned, and then one of the programmers. […] I'm doing the music and the sound, and also as much implementation as I can. So sometimes it's a night where I'm just writing music. […] I will have musical examples that have been sent to me, usually through Slack. So, I'll be listening to those because the rest of the team, they have a very— They often have a very

> specific idea of what they want. And so, I try to kind of make sure that that music stays within their desired constraints. […] And so, if it's a composing night, that's what I'm using. And what will usually happen is I make the track and then I send it off. And depending on the time of the night—if it's midnight and I've sent it off, I'm like, "All right. Here it is. Tell me what you think, but I'm going to bed." But if it's like 8 PM, I could be like, "Hey, y'all. Here's what I have so far. What do you think?" […] If it's implementation day or a bug-fixing day, then I'm going to be in Unity, which is what we're building the game in. And so, whatever I'm doing is just kind of—Usually, it's like [I'm] playing the game, [and] I come across an audio bug, and ideally it's something I can fix. If it's not something I can fix, then I just tell the programmer about it. […] There's a lot of stuff I can fix myself—like volume levels, or setting up footstep zones, that's on me—and that's something that's pretty simple for me to do. And I don't need programmer help to do it. But sometimes stuff comes up and sometimes it's like, "Hey, why is— why is this mix bus getting turned down at this moment? *I* didn't make it do that—if you're making it do that, [then] you need to stop."

As with contract workers who are hired to a tiny organization to complete specific tasks, longer-term members who were recruited to fill certain job roles are often fairly clear about how their role fits into the organization

Other participants from tiny organizations discussed the difficulty in strictly-defining tasks between members, especially considering the amount of work that needed to be divided between individuals. Accordingly, members of these organizations might need to adopt a range of different tasks either directly from the start of the project or as the project developed. One participant described the flexibility of roles within many independent game design teams:

> So, with indie game developers, I guess you just make up your own job title [laughter]. […] I mean, roles like— So in the game company that I have now, my role is all of the art stuff—[and] probably the sound now? And then the way [my co-founder] and I work together is—[he] is computer science. He got a degree in physics, but his first degree was in computer science—He likes to go slowly and meticulously. And then that is not the best for game design, really, because you're making something nobody knows how to make, right, all the time—at least if it's anything anybody wants to play, probably. So, I also do a bunch of programming, but I just program something crazy fast with lots of bugs [laughs] and show that it can work and then I give it to him. (Jeremy Johnson)

Another participant described a similar lack of clear job titles on such a small collaborative team, saying:

> I mean, the [game] I'm working on right now, we don't really have titles because there's just two of us. So, I don't know. […] Well, so on the most recent project I'm working on right now, I do programming. I also do audio, like sound effects. I am doing some music, but I'm planning on contacting another friend to help me out with that because I like his music a lot more. And then I'm also doing 3D modeling. And making all the 2D artwork for the game. But then the other person who's on the team is the writer and she writes basically all the dialogue for the game. Which is great because it's a very dialogue-heavy game. […] So, I basically handle *everything else* outside of dialogue. And hopefully, in the future, I'll be able to contract out one of my friends to do music. And I have, in the past, also gotten a friend to do some artwork for the game. But I don't know if we'll keep doing that or not. We'll see. (Ava Pek)

As both of these examples illustrate, participants in tiny organizations frequently described handling a variety of tasks that would normally be divided between different job roles in a larger organization.

For individuals who are working primarily within network organizations, building up this diversity of and flexibility in job roles can potentially be a strength, as this range allows them to work on a variety of projects and tasks. This is particularly the case with one participant who is currently involved in multiple organizations and is experienced in a number of different roles, particularly in handling the needs of his own company:

> I'm a little bit of a Jack-of-all-trades. I've done programming, art direction, hands-on art production, QA, producer-scheduler-type person, team leader, hiring manager, biz manager. [laughs] I mean, I ran my own company—it's sort of based here in Austin, although it's a remote company, a distributed company. So, I've kind of been involved in a little bit of everything—in particular in my own company. In the past, it was a bit more like, "Hey, you've been hired to be a creative director, [or] you've been hired to be a game designer scripter." [Which] was my first ever job in the industry—so in that case, a slightly narrower focus, but I've always worked in companies where you're kind of allowed to do whatever. So that's kind of why I hesitated when you asked what my role is. It really depends on the day. If today somebody needs to just respond to customer emails, that's what I'm going to do. (Randolph Smith)

Flexibility in role definition and task assignment can accordingly be driven by time constraints, sudden needs for skills that were not currently being met, or even other interpersonal factors related to diversity (which I discuss in more detail in Chapter 6, as related to extra or invisible labor for members of underrepresented or marginalized groups).

In contrast to the bureaucratic model, institutional adhocracies allow for some degree of cross-cutting in tasks between departments and divisions, particularly by shifting some of the focus from the department to the project and looking "beyond their departments for team members who can bring unique value to that unique project" (Spinuzzi, 2015, p. 24). Once again, participants from most large and very large organizations discussed some form of cross-cutting in task divisions that related to working on a specific project.

Frequently, such "unique value" is related to the perceived importance of certain job roles within a video game design organization, making them more likely to work across departments due to the nature of their work tasks. Such is the case for a writing-focused designer, who described how the writing team is consistently consulted at various stages of the development process:

> Initially, the writing group, we collaborate with each other. […] And then we'll actually collaborate a little bit with the executive level to make sure—and again, because we make a game that's for younger people, we're constantly looking out for, "Oh, is this inappropriate? Can this be read the wrong way?"—and so we'll run it by the creative director who'll go, "Yeah, that sounds cool," or, "Hey, how about you do this?" And so, we'll integrate all of that into the outline.
>
> Then we take the outline, [and] we build that into an asset list. The asset list we coordinate with art on, and they fill in all the gaps on the asset list. We figure out what we need to cut, what we need to make provisional. Then we go to design with the outlines and make sure from them that everything looks [good]. Then we write the actual script. […] And then after that, there's ongoing collaboration with art about, "Hey, is this what you were envisioning?" And there's ongoing

> collaboration with design about, "Hey, can we make these two quests into one quest, or whatever?" Or, "I don't think this is going to work." Or, "We need an extra state object here," and so then design and art are both pulled into it with us.
>
> And then finally, the biggest collaboration at the end is with sound. […] So, our sound guys, we take this script, [and] they convert it into the actual booth script that the actors have. And then one of us writers will go to the booth [on] the days that they're recording, so that we can coach the actors and correct them on stuff and make sure that they're saying the names properly and all of that. And that is also really, really fun. (Sam Johnson)

In addition to the importance of an entire job role in connecting teams, one participant described playing a unique, cross-cutting role to unite various departments within a large organization:

> So that kind of comes back to what I was talking about earlier about how I have been working on documentation, I guess, where— I'm given kind of the overview by the creative director. And then I take that and translate it into more specifics of how that system would work to achieve the goals that he wants. And then I take that to—usually, first to tech, to the engineers, and say, "Okay, here's what I want. What of this can I actually have? And what of this do I have to change?" And then I make changes accordingly. And then I'll go to the art side of things—usually, in my case, the UI, although sometimes it does require talking to the environment artists—and saying, "Here's what I want. Tech has said this. I made these changes and now it's your turn to comment on this and tell me, what suggestions would you have to make this better, or what do you think that you can't do at all?" (Ricky Llamas)

In this way, many of the organizations that are larger than "tiny" employ some combination of both a bureaucratic model and institutional adhocracy for dividing and allocating tasks.

In contrast to these models, nearly all tiny organizations (and the tiny-small organization) adopt a more networked (or all-edge adhocracy) approach to task division, by going beyond the departmental structure to be fully project-oriented and to connect people in a relatively flat organizational structure. As I indicated in my above discussion about participants' difficulty in precisely defining the boundaries of most of the tiny organizations, "the borders among fields, specialties, disciplines, trades, and

organizations are porous" for these participants—especially as they encourage voluntary alliances in which each member may "pursue their own motivations, values, and ideal outcomes as well as those of the alliance" (Spinuzzi, 2015, p. 27). One participant described the nature of such an organization, saying:

> It's interesting. It's kind of like—there were three of us and we're each independent nodes, basically. It's not like we were part of a company where we're all working on this every day. So, the most recent— The last week and a half of the project, I was the only one working on it. The other two people involved had finished and submitted their stuff, and had received payment. Final invoices were sent. So, the last days were just me working solo, writing code and pushing things.

Additionally, in the case of such all-edge tiny organizations, the division of tasks may be delineated for a particular project based on specific needs and the degree to which work is contracted, as contractors are generally hired to complete very specific tasks.

A consideration of task division and allocation would not be complete without also examining potential "failures" of task assignments—such as gaps, duplications, and noticeable differences (or inequalities) in work division.

4.3.2: Gaps, Duplications, and Differences in Work Division

Participants described only a few clear instances of duplications of tasks. In the case of one large organization, task duplication could potentially happen within the same department or job role due to the number of workers handling similar tasks:

> Within the writing group, again, once our script draft is done, we'll read [it] and make sure that we like the dialog and that we're not saying the same thing five times because two different guys wrote two different quests. (Sam Johnson)

In contrast to larger organizations where tasks are more strictly defined, participants in most tiny organizations rarely discussed duplication of tasks (even though their task divisions and/or job roles were less defined). Due to the ratio of the large amount of work

to a small number of members, it is more likely for tiny organizations to struggle with gaps in task completion—thus leading to discussions (such as those above in section 4.2) related to increasing the organization size or contracting out work.

This is certainly the case with one tiny organization, whose members try to balance individual preference and experience with the needs of the group:

> The other thing is how much we have to juggle—we have so many different roles that we are intersecting with each other's work. But not only that, marketing is our biggest challenge by far. We have to go into territory that no one's familiar or comfortable with. Social media—none of us are into it. […] Right [laughs]. We try to divide everything up equally, but then if someone feels particularly comfortable with [a particular task] or excited about it, then it's like, okay— We ask, "Do you feel okay with essentially taking on the burden of this or taking on the major workload?" And if it's a yes, then great. If it's, "No, I'm still busy with other stuff," then the work is still evenly divided, or we talk about how important it is and what we should focus on instead. (Robyn Haley)

While balancing each member's opinion and needs equally within such a flat organization may be the ideal, certain members can still find themselves trying to address critical gaps. In this particular organization, a member of an underrepresented group felt that they were ultimately being unfairly pressured to do some such tasks. (I discuss this example more in Chapter 6).

Accordingly, in addition to (or perhaps in response to) such gaps in necessary tasks, some members may be expected to complete more tasks than they can realistically manage within a given time frame. Participants from organizations of all sizes described some difficulty in realistically assigning tasks to themselves or to others. One participant from a large organization discussed working with the art team lead to prioritize task assignments:

> Our problem right now is that we don't have enough artists. It seems like we have a lot, but we don't have enough because art is so slow. So, I kind of was working with my manager to figure out who do we give the stuff that we need to finish because we're already past our design lock, which is important. (Katie Roberts)

Another participant from a large organization described a similar challenge in matching task assignments to the available number of workers, which required collaboration across teams:

> I found out that tomorrow we're going to have another in-depth discussion about the asset lists […] and we're going to make sure that our timeline for production works. And I always dread those because they'll turn into, "How much can we cut, how much can we simplify? Oh, well, instead of a unique guy, we could just make this one of those dudes, but can you give him a green hat?" And sometimes we can't even give him a green hat. […] You run into this trap where, just with sequelitis, they expect it to get bigger and better, and bigger and better, but your team gets smaller. Live teams aren't as big as production teams. So, we've been threading that needle lately. […] About six weeks ago […] the schedule just wound up very bad. Usually with the teams, we'll trade assets with between each other—if [one game] has a hard deadline, some artists or animators will go to them, etcetera, etcetera. The way that it all lined up, there just wasn't anything available. […] As a result, the decision got made to do some outsourcing for art assets—and that decision basically got made because we kicked around the asset list and then we got to a point where we couldn't go any thinner without seriously degrading the quality of the final product. […] Which is a significant decision for the company because it's going to result in money, but as part of that, what we also did was, we went over that list and made sure that we were at our minimum but also we helped art figure out which assets should we outsource versus which ones do we *need* to keep in house. (Sam Johnson)

In this case, part of the solution was to outsource (or contract) some of the tasks, which is a strategy that was more common in tiny organizations that I profiled.

For members of tiny organizations who may be working in other capacities (such as at "day jobs"), balancing workloads takes on an extra dimension in addition to coordinating work within the organization:

> I guess my main challenges are [that] I set sort of lofty goals, and so then […] I just set this insane goal for how much to write or how much to edit [on the game]. And then I'd be sitting there for 14 hours with my neck killing me [laughter]. Just to get it done [partly because I'm balancing other jobs and commitments], because we've had some issues where—I think [my co-member is] struggling through that now [because] he does much better working in small chunks than I do—but you end up with this thing that's four hours of work, and it takes like

> three weeks to do [laughter]. I'm like, "No, I'm going to finish this all today," whatever it is. […] I've been trying to get [him] more interested in— Like, I run a sort of an agile-ish [strategy]—with one man, it sort of doesn't really make any sense—but [anyway,] I have a backlog and I have my own Kanban thing where I scoop things over, but it's just for me. He doesn't participate in it. I have tried to get him to do it, but then it just sort of peters out. […] So, I have two [tools to track tasks]. I just have websites that—whichever website lets one user do agile development tools for free, I use that. So, I have one for the Kanban stuff and then one for my backlog. But the backlog also has like all the other stuff in my life too. The other one is just game development, but the backlog is like, yeah. I have all the [tasks for my other jobs]—I have to design this course by this time, I have to have a syllabus done by this time, burning objectives, whatever. (Jeremy Johnson)

Notably, this tiny organization does not currently hire out any tasks to contractors, which is a strategy that many of the tiny organizations employ to meet specific needs. When a task is being prepared for contracting, defining the scope of that task becomes particularly important as excessive or overlapping tasks have a clear financial cost.

Additionally, while most tiny organizations hire contractors only when work is available and for a very specific task, larger organizations with full-time employees may be particularly concerned about a potential lack of available tasks for specific members. As one participant described, the role of ensuring work for others may fall on particular teams or members of an organization:

> We spent a long time polishing the next four stanzas [of a promotional story] because the guy who's doing the storybook artwork needs a bunch of them. He's run out, so we keep him fed. […] I would say, that is probably what drives us in terms of the time management thing. We've got to keep people fed. You can't have artists idle. You can't have designers idle. So, the timeline— The reason that we're writing the scripts now is because we know by X date, the designers will be done doing what they're doing now, and so we have things to hand off to them. (Sam Johnson)

The need to keep members busy—particularly in more bureaucratic organizations—can also sometimes lead to overlap in task assignments between job roles or departments. This is also the case with this team, who may find themselves doing a variety of tasks that touch on different departments as the pace of work changes over the course of a year:

> I've also been working on quest scripts right now. The update will go live in November or something, and this is the busiest time of the year for us. […] And [then] they tap us when needed, and we then are much more focused on the mobile games and stuff like that. […] We also get tapped pretty much to have our eyes on everything that the public is going to see, so marketing materials and stuff like that. We'll do a little bit of copyrighting here and there. […] Like this thing with the storybook, because it's sort of game fictioning, we pretty much led with that, but for a lot of other things like product descriptions and— For instance, we have an online store where you can buy chunks of story. The summary of what this world is, we'll write that. But for retail products and things, typically, the marketing group will write that, and then, we'll just make sure that it makes sense and everything is spelled properly. The other things that we check— In the community realm, our producers will sometimes go make posts about, "This is what's coming up. This is the news this week" or "this month," or whatever, and we'll go over that with a fine-toothed comb just to make sure the sentences all make sense. (Sam Johnson)

Such "tapping" by other departments could potentially create some tension between job roles if the creative boundaries of who "owns" each task are not clear enough.

Another key tension in the division and allocation of tasks, therefore, is that between clarity and creativity.

4.3.3: Clarity and Creativity

While a lack of clarity in task or role responsibility can "lead to employees' working on tasks that fit their personal preferences" without aligning with organization-wide goals, an excessive formalization of these roles "may overdefine how employees are to do their work" (Kottke & Pelletier, 2017, p. 1145). As a result of too strict of a definition, "creativity might be stifled" as many organization members feel "they should 'keep to the script'" (2017, p. 1145). One participant with experience in leading teams of various sizes expressed how his role in an organization is often key to maintaining such a balance:

> I mean, creative collaboration is nothing if not a nonstop string of surprises. [laughter] […] So I feel like the workflow is less intended to manage that, and more to be the firehose through which it flows. And that's kind of the sloppy

> comment—and sort of like, "Well, we never know for sure what to expect. Creativity is an exploratory process." You hope it's going to be surprising in a lot of ways. But at least, you know where to find it. It's just like, if you search for this one hashtag in Slack—[then] there it all is. And that's kind of like as ideal as it gets. Instead of being like, "I don't know, man. We have 94 emails [laughs], text messages, chats. Sometimes, we upload it to our forums." I find that the more places that it can go, the more of a mess it is. And so, I like to have one place where the feedback goes. But otherwise, I expect it to be surprising.
>
> […] I think I've refined my approach to creative workflow over the years to both prevent frustration and wasted effort, while also enabling participants who are invested to bring their own surprising creativity to the projects. And that is the goal, right? So, people don't feel like, "This guy doesn't know what he wants. And [he] said no, and he's trying to explain this confusing thing." You don't want that. I've been there in the past. But you also don't want them to be like, "Well, here's exactly how it is." [And then,] "Well, couldn't we—?" "No. Exactly like this." So, you sort of try to do this dance between those two parameters. And the ideal is where people are like, "Oh, cool. That wasn't exactly right yet, but we had some really exciting ideas. And you really like this suggestion that I had, and now we're—" That's the idea. Nobody wants—nobody who's creative, and there's a lot of creative people—to work on a team where they're treated like a robot. This isn't a factory where you're pulling on levers and looking for bad vegetables on a conveyor belt. This is a team, where you trained for four years in college to be an artist—whether that's a programmer artist, or a visual artist, or a 3D modeler or whatever, and you would like to bring your own creativity. And so, you're looking for boundaries, but also flexibility. (Randolph Smith)

While the burden of creating this balance of "boundaries, but also flexibility" may sometimes fall primarily on specific job roles—especially in larger and less flat organizations—many participants from organizations of different sizes described how such negotiations eventually impact some aspect of their collaborative work.

Sometimes, a strong division between tasks can lead to greater freedom for creativity—especially if there is a strong degree of trust between members and across job roles. One participant from a large organization described the power that letting go of control of tasks performed by members in other roles can have for supporting collaborative creative work:

> And I will say, too, just on that collaborative note— I learned a long time ago that, while to *me* the actual verbiage is very sacred—I don't want designers or somebody re-writing what we write—but if the line is too long and it won't fit in the UI, then tell me, and we'll edit it. But beyond that, in terms of the story—as long as I have these events happening in this order, and we get our emotional throughput here, and as long as it's basically what we said, I don't care how you architect it. I don't care, you know, "Do we need to make these two quests into one quest?"—whatever.
>
> […] And so, "don't care" is just something that I'm happy to always go to. And it's not that I'm belittling you or your work. It's that it doesn't matter to *me*. Go do what you do. Like, "What powers should this guy have?"—[well,] every now and then, we'll have a very strong feeling that, "Oh, he needs to do this," because story-wise, this is who he is. But for little-bitty dudes—"don't care." Oh, "How hard should this fight be?" It should be pretty hard. Now, in terms of what that means, design-wise, I don't know—and I don't want to know. I've got other things to focus on. (Sam Johnson)

Similarly, another participant in a tiny organization discussed how a planned separation of work (guided by initial discussion between members and by their specific tool selection) allowed for surprising creativity for members even within the same role:

> I was surprised even though I don't think it was surprising. I was surprised to see how the other two paths had been written. It was not how I would have written them, obviously, because I didn't write them, right? But it was interesting to see how different. Even though we started from the same, kind of, first third of the story, the second and third thirds of the story were so different based on which character's path you were interrogating, because of the different writers. And we all had different styles and it made sense, I think, to keep it as each character path written by one person, because then it read coherently. So, style differences could be explained by the character differences, too.
>
> But it did surprise me just because that was an interesting [outcome]—you know where it's going to end up and you know kind of what's going to happen. And we had discussed major plot points so we could kind of line stuff up narrative-wise, but it was still kind of weird to see how different it read.

These examples also highlight the role of coordination in balancing the tension between clarity and creativity, in addition to structuring members and tasks.

In the next section, therefore, I discuss how the structural feature of coordination relates to participants' work in video game design organizations.

4.4: COORDINATION

In this section, I discuss how participants describe the structural feature of coordination within their organizations, including how these methods for coordinating work also vary by organizational size. The following sub-sections discuss the most significant aspects of coordination within participants' organization (interdependency, span of control, the flow of information and communication, and coordination within teams), including examples of where diversity might be related to these different aspects.

4.4.1: Interdependency

The degree of interdependency (or integration) within an organization impacts the "level of integration of tasks and activities across different workers," wherein highly-integrated organizations "require the cooperation and collaboration of many different employees to get work done" and nonintegrated organizations "are composed of individuals who work largely on their own and do not require assistance or products from other employees" (Kottke & Pelletier, 2017, p. 1142). The level of interdependency within participants' organizations is not strictly correlated with the size of the organization, although most organizations larger than "tiny" tend to have a high level of integration in at least some aspects: 3 out of 11 tiny organizations, 1 out of 2 small organizations, and 3 out of 4 large organizations could generally be considered more highly integrated. For organizations larger than "tiny," however, departmentalization (as described above) can also lead to varying degrees of interdependency between—and within—specific departments. At the same time, I would argue that the highly

collaborative and inter-disciplinary nature of video game design makes it very difficult (if not impossible) for work to be completely independent in any organization.

In more highly-integrated organizations, coordination through the centralized creation and management of formalized (and documented) tasks is particularly important. (I further discuss the use of particular collaborative tools to manage these tasks in Chapter 5.) For tiny organizations, the creation of these tasks is often a collaborative process, where all members must periodically agree on and create tasks so that their integrated work will hit fewer roadblocks. One participant described such a process in detail—including the use of a collaborative tool—which leads to successful results:

> We have a meeting where we outline what our next goal is going to be. […] So, we discuss what the project needs in order to appeal to that, and from there we break down each individual task. So, things like UI, what animations, what characters, what game design functions are needed, as well. One of the big collaborative things that takes all three of us is we have a scene that's introducing a new character, [for example]. […] That's all of us together. We split up the tasks and then it's all on a whiteboard at first so that it's easy to jot down as we're discussing. And then afterward, we assess everything that's on the whiteboard. And then we go to Instagantt [a collaborative project management tool] and we assign to each person what the tasks are going to be and try to estimate how much time it's going to take. […] We have had very few problems with bottlenecking, honestly, which is fantastic, and that's surprising. Yeah. I think a major part of that is because we work out the meetings and regulate things so that we're not stepping on each other's toes. And Instagantt also helps with that because we know how to stack things. There have been several times where I've had to shift blocks of work so that something else can be done [by another member] that I don't have in hand yet. But because there's so much work to do, it's pretty easy to reorganize what to do. (Robyn Haley)

Once tasks are created collaboratively, the members of this tiny organization also have equal authority to modify or re-assign these tasks.

In larger organizations, however, instead of *all* members working collaboratively, the creation of tasks may be handled by a specific department (or guided by the work of a certain job role). This is the case, for example, with some of the writing and design teams

in large organizations described above, who affect task division and allocation. One lead designer discussed this process in further detail:

> [We] first start with basically, the story, the narrative. [We] come up with the characters and what they say to each other and what the action is. […] And so that starts generating tasks, right? […] They write up all those tasks, and then they send it out to the different people that would get it. And then we estimate, "Ah, it would take four hours to do this. It would take 18 hours to do this." Most of the time, we kind of know what everything takes, but if [it's] something we haven't done before, [then] you kind of really pad it. You're like, "I'm going to put 20 hours on this, even though I think I could do it in five, just in case something goes wrong." Sometimes you talk with the other teammates about it, like, "Oh, so I'll get this task and I'll read through it." Because usually, I can spot things that maybe someone left out and be like, "Oh, we don't have— If he's going to be lighting a fuse, [then] I need an animation of him doing this and then I need a light effect." And then if that task wasn't made I have to go to my lead and say, "You make this," or I write it up myself and then I send it to that person [who would be doing the task].
>
> And so basically, we kind of all come up with this thing together. We send out all these individual tasks and then it takes time to make those things. And then eventually it comes around to where I can't start working on that task until I have the animations, until I have the music, until I have the light effect. Sometimes I can block it out—but if I don't even know where the fence *is,* then I can't walk a character to the fence if I don't know where, right? And so, generally I wait until that stuff is in and then I'm like, "Okay, I'm going to start this task. Do I have all the things I need? Yes." Or, maybe "No"— [then], oh, I contact them, "Hey, are you almost done with this thing?" Or they'll be like, "Yeah, I'm almost done, but it's a work-in-progress version." And I'm like, "That's fine, that's all I need. You can finish it while I'm working on this, right?" And then I put it all together, here comes a character, I do all the stuff. If I hit a little snag halfway through, I'll go work with that person: [for example,] "Hey, the light effect—you made it giant, it's as big as his head. We can't have that. Don't do that. Stop." So, they shrink it down. And so, all those things come up very often. And then we put it in and we're like, "Okay." And then we review it—looks good, on to the next thing.

When asked if there is anything particularly surprising about the way that this specific process works, this participant discussed some of the tradeoffs of such a centralized task coordination process in more detail, saying:

> Sometimes it's a little [surprising]—I'm so used to it that it's hard to say it's surprising. It's almost like if I take a step out and analyze it from an outside perspective, it might sound surprising—that oftentimes the people that make all the tasks are not the one doing the work. And so why am I the one that has to—? Then it really— We don't know the true cost until someone like me reads through it—it doesn't have to be me, specifically, it's the worker bee—the person actually doing all the work. The real cost comes in when they're going through and going, "No, you forgot this," or, "We can't do that." And then it balloons up, right? Sometimes they should probably be just intimately involved in the starting process. You would know quicker whether you can do something or not, instead of me going— I don't know what they're doing for the next chapter and they've already started writing everything. Meaning they've already started requests—they've already written up all the tasks. They've requested everything, I don't even know what [the story] is about because I'm busy mopping up the rest of this and polishing up the current one that we're on. So then, let's say that they have already requested something that is a nightmare. They don't know it and I haven't seen it [yet], until it's sort of like, "we can't do that, but I can do *this*." But maybe they really wanted that first thing and I gave them the 85% version, so.

He added, however, that there could also be challenges in such a centralized process, adding:

> Well, on the other hand, the counter to what I kind of just described [is that] I'm too busy to look at all the new things. It would slow us down. And so, the most knowledgeable people— Sometimes the most knowledgeable people are actually not the best person to think about the next thing. Oftentimes, if you're in the trenches, you're so [bogged] down in little details that you get consumed by those little small things. And [so] it's much easier for a person to maintain a vision of a product if they are not bogged down in those details, because they *don't* care. What's major to me—at a minutia, it doesn't even matter. Does the player care that this animation didn't loop properly and that's why I can't do this twisty [action]? No. They care that it just twists and it looks fun. […]So, again, the counter to what I just said was well, [this process] probably results in a faster product because— Or maybe a better vision that's able to adapt better, [if] you don't have the worker bees calling the shots.

This example illustrates that there is a very real possibility that "time could be wasted because of distraction," or that backlogs of work might "affect successive steps in the work cycle" if members' work becomes too closely connected (Kottke & Pelletier, 2017, pp. 1145–1146).

In contrast, however, if members become too isolated or overly autonomous, they may become disconnected from the larger goals of the organization and find it difficult to connect their work with other members' efforts. This is the case, for example, with one participant in a tiny organization who discussed the relative lack of a centralized task management system, saying:

> I've been trying to get [the other member] more interested in— Like, I run a sort of an agile-ish [strategy] […] I have tried to get him to do it, but then it just sort of peters out. So, the workflow, mostly is we talk once a week and then I monitor my own workflow, and I don't know what he does to keep on track, but he gets stuff done somehow. […] The consequence of that is that we end up doing a bunch of bad—or not necessarily bad, but not the most desirable—project management stuff. Which is like, "We have to have this in one month. So, whatever that means." And then we don't even know if we can get it done in a month, but we try like hell. […So] I have some idea what my velocity is [because with the agile strategy] the idea is that you figure out about how much work everything is and then you give it a number. […] And then presumably you have totaled all the numbers to the end of the project. And if anything else shows up that you didn't account for, you don't get to put it in. [So] for that, it looks like I can get all *my* stuff done in time [laughter]. And I think [he's] got less on his plate. Generally, I think. I could be wrong, though. […] I mean sometimes it's a little frustrating, I think, maybe for both of us, just because there's not real accountability or control. And so, I think it's a double-edged sword, really, because I think that if we had some sort of rigid system, neither of us would want to do it. Right? [laughs] And so the consequence of that is that you just have to put up with a certain amount of stuff. So, like I noticed that he will start getting anxious when I haven't made art for the game in a long time. So, I usually make a burst of a whole bunch and then he's like, ''This looks great!'' And he's excited. And then it will be like four months and I won't make anything, and he'll start to get anxious. [laughs] (Jeremy Johnson)

As this example illustrates, while less-integrated organizations may also have task management systems, the management of these systems is more distributed. Members of such organizations are more likely to create formalized task documents on a more ad hoc basis and rarely assign tasks to anyone but themselves.

Considering which organization members have the authority to create and assign tasks—both for themselves and for others—accordingly leads to the importance of the span of control within the organization.

4.4.2: Span of Control

The factor of "span of control" within an organizational structure describes the extent to which other members report to a single manager, with the height of managerial span being related to the levels of hierarchy within an organization. All organizations larger than "tiny" (including the tiny-small organization) have at least some degree of hierarchy. In general, organization size also corresponds to the width of the span of control, with large and very large organizations having more highly vertical hierarchical organizations ("in which there are many levels from the bottom to the top") where the span of control can become quite narrow (Kottke & Pelletier, 2017, pp. 1142–1143).

Sometimes, however, even strict spans of control within larger organizations might be relaxed at specific times or for specific individuals. This is the case with one participant at a large organization, who explained that she was now able to side-step some of the hierarchical work control mechanisms due to relationships that she had built with individuals over time:

> I go directly to [the person most related to an issue I'm having]; it's kind of how we've worked for a while. There used to be a time where, I mean, just because of how management was, and like, on [one game] especially because we were a new project. Now it's kind of like, I don't have to go through a manager to get approval, for whatever. It used to be [the case that I did have to] and now it's just kind of like, I can go to this person and tell them. [And they] actually prefer that because, at this point, the managers have been there for so long—the art lead and design lead—that they're like "Okay, I trust you." (Katie Roberts)

Similarly, another participant in a small organization discussed how having a department head who was personally uninterested in "micromanaging" the department allows her to have greater authority both in her own work and in interfacing with others:

> I'm pretty independent. I mean, I do have— The head of the audio department does manage all of us, but she doesn't micromanage us at all. In fact, unless a game is sounding real hecked up, she pretty much leaves us to our own devices. So, when it comes to prioritization, sometimes, I'm in a position where I can decide what I'm going to work on first myself and I can be confident enough to not have to ask anyone. But what is *more* likely to happen is [that] I will go to the designer, and I'll be like, "Hey. Here's some tasks *I* know I need to do, but what would *you* like to see first?" And then they'll tell me, and I'll work on that first to the best of my ability. But sometimes, I get blocked so then I go to the next highest [priority].

One participant from a large organization (who serves as a kind of liaison between departments, but is not exactly a manager himself) was even a bit surprised by the freedom that his managers gave him to work without constant oversight:

> [It's a bit surprising] that I'm given as much responsibility as I am. I'm often left to run unchecked for a couple of weeks at a time, even. […] Well, with the creative— So I have a lead systems designer above me, as well. So, it's him and our creative director. And I mean, by and large, I'm kind of left to my own devices of, "Here are the things that we would like you to work on. How you do that is kind of up to you." And then just check in with them every now and then. (Ricky Llamas)

While these examples should not necessarily be considered "exceptions" to the narrower spans of control found in larger organizations, they do still exist in tandem with more hierarchical structures of control—as evidenced, partly, by each participant's referral here to the importance of managers within their organizations.

In contrast, flatter (or more horizontal) organizations frequently use large spans of control with fewer levels of division between entry-level positions and top management. While none of the tiny (or the tiny-small) organizations that participants described could be considered to be highly vertical hierarchical organizations, they are not all completely

flat organizations. For example, 7 of the tiny organizations and the tiny-small organization contract tasks out to members; most of these contractors are not given equal authority over the long-term vision of the project—which these contracted members typically expect and accept as part of their role. Additionally, 5 participants from tiny organizations described themselves with a job title or role that implies some degree of extra authority or responsibility within the organization (including "Founder/Co-Founder," "Studio Head," and "President").

Coordination through the span of control also shapes how information flows through the organization, in the form of communication.

4.4.3: Flow of Information and Communication

In a rigid bureaucracy, "the manager operates as the official communication and coordination point for his or her department" through which all official communication—regardless of informal discussion between departments—must pass "via the chain of command" (Spinuzzi, 2015, p. 22). As I discussed previously, the role of the team lead in coordinating between departments was discussed by most of the participants in organizations larger than "tiny" (7 participants in total).

However, even within more bureaucratic approaches, there may again be some flexibility in communication flow. For example, other members within departmentalized organizations may be involved at certain times during the design process, especially at the beginning of key phases of work or at the founding of a new organization:

> And one thing I actually appreciate about [this organization] is that we recently—The sub-studio that I do the audio for is actually very newly formed. And they had me come in for the first leadership meeting where we talked about process, even though I don't have a leadership position. I do not have people working under me. […] But they had me go to that leadership meeting because they were like, "Okay. Well, we have art represented. And we have math represented. We have

> programmers represented. We just need to make sure that we're not doing anything that just totally screws over the audio department." But there are a lot of studios where that doesn't happen.

As this participant's (pleased) surprise indicates, however, even this periodic involvement of others beyond managers or team leads is not always a regular occurrence within such organizations.

In contrast to the bureaucratic model, networked organizations that span boundaries and connect many different types of actors require frequent communication and a process of mutual adjustment. In such structures, negotiation becomes essential. An important part of the negotiation process, however, is adjusting the flow of information to be appropriate for different members and different roles. One participant with experience working in several smaller, networked organizations described the information control and negotiation processes involved in integrated members with different roles and interests into the larger vision of the project:

> You have an idea in your head about what this thing is supposed to be, and you're trying to communicate it to people so they get what it is and do it correctly—ideally—the first time. But you don't necessarily know *exactly* what it is. So, it's a two-way process where they're like, "Well, what if we did it like this?" or like, "Is that correct?" And you're like, "Sort of, except for don't forget there's this other part—and if we do it like *that* then that'll screw up this *other* thing." So, you kind of do this back and forth thing because, in my role as the director, you're the vision holder for the whole project. […] So, you feed that information. You're holding the whole puzzle in your head and you're helping to provide that perspective only when they need it. […] Another mistake I made when I first started being a director is trying to explain the entire project to everybody. Because they'd be like, "Hey. How do the desert boots work?" and I'd just be like, "So, anyway, we're making a game about sneaking around in castles." And they'd be like, "What the—? What? I don't care. [Just,] like, how do desert boots work?" So, it's a lot of selective information depending on if that person wants or needs it. (Randolph Smith)

Although members in certain roles sometimes need to self-adjust their own flows of information and communication within any size of organization, this ability may be

particularly relevant in network organizations where membership is particularly fluid and voluntary.

On one hand, the growth and sophistication of ICTs that promote "opt-in collaboration on a broader scale" have allowed members to effectively "communicate, coordinate, and cooperate" within more distributed network structures (Spinuzzi, 2015, p. 30), particularly when that work is still relatively geographically local. One the other hand, "necessary support for virtual teams has not grown so quickly" (2015, p. 30). One participant discussed such challenges in remote work, including how the use of ICTs can mitigate them, saying:

> I have done a lot of remote work with distributed teams. […] Typically, when you're in production, [you're] always meeting with people and always talking about what they're doing. And the job is just to continue to communicate. And so, one of the processes we've found very helpful [during the production phase] was—even if you have a lot of clarity on what you're doing today and you just sit there by yourself and do it—we start every morning with a video chat meeting. So, you just look people face-to-face every morning. And we're just like, "Hey, what are you doing today?" "I'm working on this thing." "Cool. I'm working on my thing." "Okay. Cool. Bye." And if that's all it is—great.
>
> But usually, a little something comes up or you're like, "Hey, don't forget. When I'm done with this, I'm going to need that spec for that other thing," or "I remember that…" Or like, "Yeah. I'm 100% sure on what I'm going to do. [But] there's this weird bit about this other system. Like, do we know— Where's the documentation for that?" "Oh, the documentation. Uh, we have an old version over here. But just read it and get back to me and I'll tell you what's different." Stuff like that. So, there's usually value in having that face-to-face communication every day. And then on top of that, when we're in remote teams we really believe in interrupt policies where you're like, "Hey, my work is going to get blocked in half an hour." So, I'm just going to hang on Slack and be like, "Hey, can we meet in half an hour?" And then we just have like a five-minute video chat, face-to-face. You want to create that culture of walking over to somebody's desk and being like, "Hey, if you're not busy, can I ask you something?" (Randolph Smith)

In this case, this participant felt that using these tools allowed his organization to overcome many of the coordination issues that could arise especially in smaller networked and geographically-distributed teams.

Bureaucratic structures are not immune to coordination issues, either. Coordination issues in these structures may be caused by over-emphasizing rule-following and by entrenching managers who are focused on "guarding their turf," in addition to the accretion of excess bureaucratic layers, procedures, and paperwork. One participant from a very large organization described how these issues can have an overall chilling effect on collaboration, saying:

> In unhealthy environments, it's a fight—that people start to sort of pee a little circle around their territory and it can be confrontational. And I've seen that happen at my current job. In healthier environments, it's much more of a collaboration with mutual respect. So, I was surprised here, how siloed it has become. Especially, I think it happens more, too, in live products, as teams sort of start to fall into a flow. And, you know, the artists make art, the designers write their little documents. I find that in new game development—when you're creating a new game from scratch—it *has* to be much more collaborative. And so, on our end of the spectrum, our product has reached just enough of an age where that level of collaboration is starting to fall away. (Thomas Jung)

In this case, the effects of bureaucratic information and communication control are additionally amplified by the stage of game development.

One way that organizations can avoid such complications with inter-departmental bureaucracy and hierarchy is to focus on keeping most (or all) of their coordination within a single team.

4.4.4: Coordination Within Teams

As I mentioned in Chapter 2, some larger organizations turn to cross-functional project teams to address challenges in coordination. An additional strength of such coordination through teams is that this structure also allows members to collectively

reach a consensus on the team's values and work approach. While all participants in organizations larger than "tiny" described the presence of game-focused teams within the organization, many of these teams still interface with the organization through other coordination mechanisms described above.

Although many participants across different organization sizes described some form of consensus-building coordination within their team or department, this process is especially relevant for tiny organizations that essentially function as a single, highly cohesive project team. In total, 5 tiny organizations coordinate primarily as a single, project-focused team, as opposed to using more of a network approach (6 organizations). In most tiny organizations, however, members actually coordinate using some hybrid between a single-team approach and more of a network structure approach. For important strategic decisions, however, the single-team organizations are more likely to adopt a full consensus-based approach to coordination.

The process of equal and collaborative coordination around values can have an important impact on making important decisions about the design of a game. For example, one participant in a tiny organization described how an early decision about values and goals shaped core aspects of the game's development, saying:

> The framing story was something that we had to design kind of collaboratively, and I think the "yes...and" [approach] worked well for us because it was really like a brainstorming process more than a kind of "trying to narrow the field down" [process]. We knew when we started, when we got together, that we wanted to do a space alien dating sim because we found that funny, and we knew that a key component of it had to be that player characters could—or players could assert their own kind of gender and sexual identity at the start of the game. So, they could choose that. And we also wanted to have characters that represented different aspects of like, marginalized identities—sexual and gender identities.
>
> […] So, we had to make that decision fairly early on because it really did determine how the rest of the game played out. Like, should we be writing these

> to be fairly like gender agnostic or what? So, it was a hard decision to make. And we, I think, just talked about it for a long time if I remember and decided what we cared about, like what was an important part of this decision, and that was representing identity. […] We all three of us talked, bringing in stuff from our own experiences, of living, of playing games, and designing stuff to try to come to a consensus on what the principles that we agreed on were. One of which was representing characters—very well-developed characters—was important. And then, thinking about how we would make that work in the game.

As this example illustrates, decisions around values consensus can also have a significant impact on the team's understanding of diversity within the game (in this case, a focus on inclusively representing "marginalized" gender and sexual identities). This type of coordination also potentially allows for greater input of diverse team members, including members from underrepresented and marginalized groups—but only, once again, if all members are equally valued and equally considered as these decisions are being made.

Accordingly, the decision-making process is a salient feature of organizational structure that builds on each of the features (size, task division and allocation, and coordination) that I have discussed so far.

4.5: Decision Making

The process of decision making is crucial for organizations of every size and interacts with all of the other structural features. Decision-making strategies can range between systems where "all or most decisions are made by a small group of individuals, often the top management team" to systems where "power and decision making are spread across individuals throughout the organization" and where individual members "have the latitude and authority to make day-to-day decisions and other important decisions that affect their work" (Kottke & Pelletier, 2017, p. 1145). All organizations larger than "tiny" use some combination of these systems, with most organizations leaning more towards a centralized approach for the most significant decisions about the

game and allowing for sub-groups or teams to make more collaborative decisions about day-to-day aspects of design. In tiny organizations, this division is defined more in terms of consensus-based/collaborative decisions versus individual, autonomous decisions.

In the following sub-sections, I discuss the most significant aspects of coordination that participants described as being relevant to their everyday work within their organizations, including: the degree to which decisions and centralized and/or specialized to management, the use of mutual adjustment and/or consensus in decision making, and a reliance on rotating leadership or network managers. Additionally, I discuss some instances where diversity may be related to these aspects.

4.5.1: Centralization and Specialization of Decisions to Management

In general, highly centralizing decision-making—especially to managers—is associated with more bureaucratical models of organizational structure. All participants from organizations larger than "tiny" described at least one significant decision that was made by a manager, a team of managers, or the head(s) of the organization.

Frequently, one goal of this approach is to streamline the decision-making process. One participant who has experience working in different sizes of organizations discussed the important role that centralized decision-making can play in keeping a project on track, especially in terms of timing and scope, saying:

> Me and the fellow co-owner would often be the final decision-makers on that. And there's a little bit of a willful "good cop, bad cop" sort of process that goes on, where I'm the one— And you often hear about this between directors and producers, where the directors are the good cop and the producers are the bad cop. And so, the producer-bad-cop says, like, "Schedule. Budget considerations. Let's push for the lowest number." In part, because doing less work lets you do it better and more reliably, and doing more work means you're sort of strung out and diluted and stressed out [laughter]. So, they're pushing for a smaller number for lots of good reasons. And then the director is the good cop, trying to protect the vision of the project and be like, "Oh, but we need these things for our audience

> members." And so, he and I would be sort of the ultimate decision-makers, but then we'd try to involve the whole team, and be like, "Well, what are you most excited to work on?" […] I like to involve people in whatever they— We take their input seriously because I think that makes people feel more invested. The good cop, bad cop thing is a good process for, like, embodying the considerations of the project. You know, you might not want to think like a bad cop. But it is for the long-term health of the project. Again, the perfect game that never ships is not a game at all—to say nothing about a good game. (Randolph Smith)

When I asked what might be challenging about this process, he additionally discussed the limitations of specializing this kind of decision making, saying:

> I mean, I'm describing a pretty pivotal decision in a large project. And so, you will never be sure you made the right decision. One of the important things about leadership is that your job is not to be right all the time. It's to be right more often and faster than a committee of people debating it. Your job is to quickly be slightly more right than a slow committee. And so, the downside of that is you never are sure that any decision you make ever is the perfect decision and you just have to live with that. So, do we have the right levels? I don't know. Still don't know. Do I feel good about how the game came out? Yeah. Good enough. (Randolph Smith)

One tradeoff of specializing such an important decision—especially to just one or two members—is that responsibility for consequences for those decisions may also be specialized.

Some decisions, while still primarily centralized, are also shaped by managers collaborating across departments in larger organizations. For example, one participant from a large organization described a decision to outsource some tasks, saying:

> That's up the line from us. Basically, the art lead and I will be talking to the producer. The producer will say, "You need to cut this down." And once we have the list, it's the producer who goes through and takes—the art lead, for every item, will go, "This will take this many days, this many days, this many days"—[and then] it's the producer who tallies all that up, looks at the calendar, and says, "Based on this deadline, we don't have enough days." So, we get the directive from production to make the lists smaller. And once we get to that point where we can't go any smaller without hurting [the game], and production agrees, then our producer goes to the executive producer, who then talks to the executives. And they will make the call that, yes, the money is worth doing. […] I think the

> surprising thing to me was the extent of [outsourcing] that was needed, [just] because the art lead and I—and the artists, and the designers, and my writers—as we were going over the lists, we had a gut feel based on previous ones we've done. We're like, "Yeah. This is pretty good. Okay. I think we can do this." And then the surprise was when they came back and went, "Well, we're over by about 50%." And we're like, "*What*?" (Sam Johnson)

In this case, while the participant (and his team) were a bit surprised about how incongruent their own assessment was to upper management's, this surprise was not particularly upsetting.

In other cases, however, management's lack of trust in an individual or department can lead to more serious discontent. One participant from a very large organization described how such distrust can have a negative effect on members' morale, especially when it seems to be aimed at specific departments:

> I think that because the company is so metrics-based, I was surprised at how little they trust their creative people. And generally—specifically in art—it seems that we're not held in the same regard as design and programming. Or [as] who we refer to as sort of, like, the "king of mountain guys," who are the product managers, and they are the ones who look at the numbers and translate them and are often people who have MBAs. We have one guy at the office who just finished his Ph.D. in Physics, of all things. [laughs] And he came to us to analyze numbers. Yeah. So that is a surprise to me. Generally, this is the first company where I've seen that to be the case. Most other places I've worked at, the studio tends to be more open to what artists have to say and what they have to contribute. […] So, for instance, there's a surprising number of people who have no background in art trying to make artistic decisions. […] Yeah, all the time. (Thomas Jung)

Similarly, another participant from a small organization expressed some frustration in feeling that her department (and field in general) was frequently left out of important decisions that affect the entire game:

> This is something that people in my field complain about a lot—that a designer will make a change to a game that would drastically either change the audio or require a lot of new audio, and they just won't even think to tell us. I was working on a game a year ago where they added a section where there were some mine carts that move around. […] It was a two-person audio team, and neither of us

> knew about it. And then, we go to [a] meeting, and they're like, "Oh. Yeah. These new mine carts. These are great." And we're like, "How long have those been in there?" And they're like, "Oh. Yes. A couple of weeks." [laughs] And we're just like, "You know those need sound, right?" And they're like, "Yeah. I guess." [laughs] It's not malicious. Not a lot of people, like— Audio is not often thought about first. And that's okay. But if a developer isn't careful, there can be repercussions to that.

These examples illustrate a common feeling expressed by participants in non-management positions that important decisions affecting a specific job role should be made by (or at least include) members in that role.

One approach to ensuring that each role is being included in making important decisions is to include *every* member of the organization, as is the case with several of the tiny organizations that use a mutual adjustment or consensus-building approach.

4.5.2: Mutual Adjustment and/or Consensus

In strong contrast to centralizing and specializing decisions to management, some organizations work to distribute the decision-making process as widely as possible. As I have also discussed above in reference to several participants above, this approach is primarily used by tiny organizations. One participant discussed how, in comparison to larger organizations, smaller teams could more easily incorporate members and keep them engaged, saying:

> Our projects were small enough that we could involve everybody who wanted to be involved. I've been part of much larger, more professional organizations, less independent organizations. And yeah, those usually try to sort of isolate that decision-making process, in part because you don't want to disappoint people. If they actually don't have that much say, you don't want to be like, "Well, what do you care about?" And then they're like, "I really love all the leaf levels." And [you're] like, "Well, we cut them all." It kind of sucks to be asked for your opinion and then it doesn't weigh in that heavily in the decision-making process anyway. (Randolph Smith)

Another participant similarly discussed how offering the illusion of mutual adjustment or consensus in decision making—without real support—can create backlash:

> If you're going to make it open to everybody, [then] you have to be willing to be out-voted. And you have to be willing to take someone else's banner and run with it—and they weren't. And I said to my lead, "That's incredibly frustrating to feel like you are a valued member of the team, on equal with everybody there, and then have it routinely go to just four people as the decision makers. You can't ask us to be passionate about something and then constantly squash that passion. It's deeply frustrating and it leads to dissent."

Accordingly, organizations should consider the full impacts of inadequately (or even adequately) implementing a consensus-building process before pursuing this kind of approach.

While making decisions completely consensually may be a challenge for some of the reasons I describe above, several participants from organizations of different sizes expressed a desire to incorporate more of this type of decision making into their organization. One participant from a tiny organization described the organization members' commitment to making an important decision related to diversity collaboratively before even starting project, saying:

> So, we had to make a decision about how we wanted to do [express gender identities and sexual identities]. And that was a decision that was actually kind of challenging because there are, like, two ways to deal with this in the context of dating sims. So, one is [that] you design your player character and you identify your gender identity and your sexuality, or what gender identities you're actually interested in. And then [we] use that definition to characterize the characters. So, like, [we] change the pronouns *IF* you're interested in men versus women or something. […] On the other hand, the characters that we designed to be romantic interests were also characters that we wanted to have kind of distinctive gender and sexual identities. And so, it didn't exactly make sense for us to say, "Okay, just flip the pronouns when you're interested, or like, based on, whatever." So, it's not like, we wanted wallpaper, we wanted characters—so we decided that it was more important for us to represent character identities, rather than say, if you identify your player character as a man interested in men, then all of the characters identify with the pronoun "he," for example. We felt like that would be

> a disservice to the work of the [other characters]. And I mean, there's no good answer to this, I think is the main thing, but that was what we chose.

If members cannot come to a full consensus, however, they must find acceptable workarounds to support some degree of separation. This is, in fact, the case with the same participant, who actually mis-remembered how the final game was designed:

> Maybe we represented all of the characters as non-binary because they're all aliens. I can't remember. I know mine was non-binary. [checks files] No, we did do the pronoun thing, actually. For mine, I didn't want to— That's what it was. So that was how we resolved it. I was like, "I want to make a character, but I don't want to switch out pronouns or whatever." But for the others […] the only thing that changed is those pronouns […] So the characters existed, but it just switched the pronouns. And I remember having a problem with that, but I didn't care enough to change it. So that's actually more interesting now. [laughs]

She later elaborated that:

> We were limited by time […] so we had to make decisions fast, so we could get to the work of actually doing the game, making the game. So "consensus enough" was kind of the goal. We didn't have to agree on everything. It would just have to be enough consensus that we could do our own thing.

Accordingly, when considering issues of streamlining and time constraints, the goal of "consensus enough" could also open the door to some middle ground in an organization's decision-making approach. Another way for organizations to navigate between the centralized managerial approach and that of full consensus-building is to adopt a rotating leadership or network manager approach.

4.5.3: Rotating Leadership and Network Managers

Relying on rotating and temporary leadership is one strategy that networked organizations employ to adapt to inherent uncertainties and shifting variables in the decision-making process. In such approaches, members in different job roles and with specific skillsets can "come to the forefront at different stages of the project" allowing them specific responsibility over decisions made during that stage (Spinuzzi, 2015, p.

34). Although participants across organization sizes discussed several such moments, rotating leadership is most common in tiny organizations. When I asked about his tiny organization's workflow of collaboration between roles, one participant described such a division of leadership based on the different skillsets of the core members:

> So that is actually pretty interesting because it's different depending on the people that we have working. Because different roles are different--it goes without saying. So, the way it works is, I'm handling a lot of the coordination on the top end. For the writing and story, I have delegated that to [the other core member], because he's the main writer. […] Right now, we also have him working with our character artist. Since he is the one *creating* the characters, he's going to do a way better job than I can [of] talking to the artist and making sure that they know what *they* need to express with the characters. And so, I'm communicating with [him] on a one-to-one basis, in meetings, pretty much every couple of days or whatever. And then he's contacting them over email, typically. Then, I'm the one communicating with [another member] for the sound effects because I'm building the main engine itself, and kind of making sure that the atmosphere is all right, making sure the environments look good, [so] I want to have the direct connection to the sound. So, with [the other member], I talk generally over voice. Sometimes, we talk in person because he's here in Austin, but he travels a lot. So, [we use] Discord, talking over the phone—that's pretty frequent as well—usually [with] screen share. And so, different things work for different roles. (Mitchell Garrett)

In this case, the core members not only take the forefront of leadership between themselves based on their job roles, but also in interfacing with the extended network members of their organization.

Similarly, members in specific job roles (particularly—but not only—roles such "founder" and "studio head") sometimes need to adopt key behaviors used by network managers, such as "activation, framing, mobilizing, and synthesizing" (Hoflund, 2013, p. 92). On participant discussed using similar strategies to manage his tiny, networked organization, adding:

> That's the entire job of being a creative director—as far as I'm concerned—is to collaborate with the team and make them feel like they own [the game] as much as you own it, but [yet] it's still the thing that *you* need it to be. So, you don't want sloppy direction, or just like, "I don't know, a bunch of people showed up

> and we're making a ransom-note-collage project." You want it to [look] like it came out of one mind and was intended this way from the beginning. But everybody who worked on it was not micromanaged, [and] they brought themselves to it. (Randolph Smith)

This example also highlights the impact that specific individuals within an organization (in this case, a creative director) can have on decisions about game content, which is an important aspect of decision making discussed by many participants across organization sizes.

Key decision-makers also directly impact the processes of recruitment and hiring within participants' organizations.

4.6: Recruitment and Hiring Processes

Lastly, the outcome of recruitment and hiring processes has a clear effect on the structure of the organization and interacts with each of the other salient features of size, task division and allocation, coordination, and decision making. Participants discussed aspects of recruitment and hiring almost exclusively in terms of their own hiring or in relation to the inclusion of diverse demographic groups within their organization. In total, 18 participants mentioned hiring processes of some type directly and the other 2 discussed recruitment processes more indirectly.

I discuss the most significant aspects that participants discussed in the remaining sub-sections below, including: the use of formalized processes, the common approach of hiring within "two degrees of separation," the role of different forms of proximity, and the involvement of current and former colleagues. I additionally discuss how participants discussed these different approaches in relation to diversity within the organization. (I discuss the hiring process in more detail in Chapter 6, particularly in terms of promoting the inclusion of members from underrepresented and marginalized groups.)

4.6.1: Formalized Processes

In general, formalized recruiting and hiring processes are most common in larger and more bureaucratic structures. In total, 2 participants in small organizations, 5 participants in large organizations, 1 participant in a very large organization, and 1 participant from a tiny-small organization referenced the presence of formalized processes within their organization. Only 1 participant (from a small organization) actually described going through a formalized process themselves at any length, saying:

> I actually— When I was a student, I toured their studio. […] And I just remember thinking, "This could be a really, really good place to just hang out at for a few years, and build up my skills, and build up my portfolio, and put out just a ton of games—and have a good time while doing it." And so, I kind of always had [this organization] just in the back of my mind as a pretty good place to be. And then when I was at [Austin Community College] spending that year there [taking classes], [the company] put out a call for a new sound designer. And I applied, and I did not get the position. [laughs] However, I had a friend, an artist, who did—she got a completely different unrelated position at [the company]. And so, she was kind of advocating for me on the inside.
>
> And then, what happened is at the end of my time at ACC, my year was up, and I quit my terrible restaurant job that I was working at the time. […] So, what happens is I wake up day one. I look at my phone, [and] I have an Indeed notification. [The company] is hiring again. And then I applied, and I was like, "Hey, look. I know I didn't get in this past time. But look at all the *new* things I have to show you now. Look at my new demo materials." And it was enough. And I got in. And that's how I got hired at [this organization].

Notably, this participant also references having a friend involved (to a limited extent) in her hiring process, which was also frequently discussed by participants across different organization sizes (discussed more below).

Several participants from organizations larger than "tiny" discussed feeling that—although they were not particularly familiar with their organization's formalized hiring processes—they did not have any particular concerns in terms of their organization hiring individuals from diverse demographic backgrounds. For example, one participant from a

large organization described feeling that the outcomes for diversity were more than average for the industry, saying:

> I think they've been pretty good about it. I don't know necessarily how our hiring procedures go, or if we explicitly hire for diversity or anything of that sort, because I'm not usually part of the decision-making process at that point. But I know that from the people that we do hire and the people that work there, we are a pretty diverse crowd, so. […] I think at one point when we did a—it was just me and some of my coworkers, I mean—we did a little tally to see how many people of ethnic minority do we have, how many women do we have, and that sort of thing. And I don't remember the exact numbers, but we did come up above average. Which is, frankly, not like a very high bar to set, to be fair. But we were significantly above average, I guess. (Ricky Llamas)

Notably, while this participant expressed both a lack of agency around the hiring process and a lack of significant concern for the outcome, he was at some point concerned (or interested) enough to informally evaluate hiring outcomes for himself. Another participant—who was similarly satisfied overall with the diversity of members in his large organization—discussed expressing an interest in the hiring practices around diversity as part of his own hiring process, saying:

> As much as I don't feel like we have a hugely diverse group, we don't have a totally undiverse group. It's not all white dudes. I don't feel like it's a *problem*, either. When I was interviewing [for my own job], one of the questions I asked was, "Tell me about the diversity in your studio," and the person was like, "What do you mean?" And I was like, "Well, where I work now, there are no women in management." […] So, I was really curious about it, and basically, they were like, "Oh. I don't know? It's fine?" And in my experience, I feel like it pays off in the sense that there's— Nothing feels charged to me. […] And so, it doesn't feel like it's a *problem* at all, but it's also not something where the company is saying, "We're setting some kind of diversity standard in our hiring and we want to hire this many of this group in the future." It tends to be an attitude of, "We want to hire the best people who we think are going to get along with everybody else." But I also do feel like, from what I can tell—from the part of the process that I've seen—I do feel like the choices that have been made have been made on merit, not anything else.

Although this participant expressed some interest in seeing his organization make the goal of including more diverse members a more explicit part of the hiring process, he also described himself (elsewhere in the interview) as being mostly uninvolved with hiring.

Several participants likewise expressed that, although hiring practices were "pretty good" in terms of supporting diversity, their organizations could probably always be doing better in some way. For example, one participant from a small organization expressed that while some demographic groups seem fairly well-represented, there is still some "work to be done" around how some members consider issues related to gender, saying:

> I mean, it's kind of hard to say right out. We haven't hired in so long that I can't really speak to the hiring practices, and when people got let go it was pretty much across class, race, gender, and sexuality—everyone got the chop [laughter]. […] Like I said, their hiring is very much based on the content of your character, rather than anything else, and it's probably one of the more racially diverse companies I've worked at. I would say that, when it comes to gender and representation, there's still work to be done, because I will still occasionally receive a little bit of like—although decreasingly—not necessarily backlash, but feedback from somebody who will want "more sexy characters." And I'm like, "Yes, dude, [whatever]." […] But I think by and large, it's pretty good. They could always make advancements, but it's pretty good.

Another participant from a large organization similarly discussed feeling that the hiring practices were pretty good, "whatever they are," saying:

> I think there's still things we can do better, but I think the people at the higher level—the creative directors, and the people who hire, and our recruiter who does the initial screenings for business and resumes that should be at least considered—I think they do a good job, as far as I can tell, of getting diverse—I've seen diverse resumes come across *my* desk, at least when I've been asked to look at it. I know that we've hired diverse people as interns and some of them have been hired on full time. So, I don't know because I'm not in the recruiting department. I don't know what those processes are, but whatever it is, it's better than most places I've worked at. So, I'd say there's enough room for improvement, but it's better than most places. [laughs] (Rachel Ripstra)

One participant from a very large organization was a bit more specific here about some reasons why his particular organization's hiring process might attract individuals from different backgrounds, adding:

> I think it has to do with the fact that because the founders of [this company] came from *tech*, and not video games—the way they've hired, the way they try to compete with things like pay and benefits, and the nature of the benefits—they have to sort of compete with Facebook and Google to try to attract talent, especially in San Francisco, The Bay Area, and Silicon Valley. And so, it's more of a lure to different types of people. Like, our paternity and maternity benefits are insane[ly good, for example]. (Thomas Jung)

These examples additionally illustrate the importance that many organization members not directly involved with hiring place on supporting diversity in the organization through hiring processes—even if these members are often a bit vague or the details of the process or on how to improve things any further.

Very few participants described their own role within the formalized recruiting and hiring processes of their organizations in any detail. One notable exception was the studio head of the tiny-small organization, who has implemented a specific and rigorous application process for hiring interns specifically with the goal of supporting potential applicants from diverse backgrounds. (I discuss this example in more detail in Chapter 6.) Another participant from a large organization additionally discussed the idea of integrating interns within the organization as part of a formalized recruiting process, saying:

> There's times where I'm like, "Can't we hire an intern that just listens to us all day and goes, 'Oh. I'll update that doc for you guys.'" I would love that. […] And I'm also watching them. How are they reacting to all this? If they're just like, "Ugh, I didn't do that," or if they're not taking it very seriously, [then] they're probably not going to cut it. But if they're actually doing this really well and […] can actually anticipate problems or if they can remind us, then I'm like, "We should hire this person." Because they're getting it. They're clicking. And it's not

> an easy job, but what a wonderful way to find new people—rather than, "I guess I'll take a chance on you because you like Mario [games]."

On the other end of this process, 2 participants (both from large organizations, and both from underrepresented groups) similarly discussed initially joining their organizations as interns and then being hired on more permanently after proving their abilities. In this way, internships can become part of the more formalized long-term hiring process, as well.

Instead of entering their organization solely through formalized recruitment and hiring processes, however, nearly all participants discussed using one of the other mechanisms discussed below.

4.6.2: "Two Degrees of Separation"

Recruitment and hiring processes that are not strictly formalized tend to involve networking approaches. The majority of these approaches fall under some form of what one participant described as being "two degrees of separation from someone who had worked with" someone else in the organization. He further describes how this kind of networking can potentially be a problem for increasing diversity within an organization:

> The more that the game industry is a good old boys club, I think the harder it is to achieve real diversity. And for a long time, it was like that—and it still is today. It's crazy. I remember when I was working at a studio—*everyone* who we interviewed for any position *ever*—we were two degrees of separation from someone who had worked with them. Either someone on our team had worked with them, or he could make a phone call and find out [about them] from somebody [else], "Oh yeah. Dah, dah, dah." So, it's very easy to catch someone lying on their resume—which is nice, but by the same token, for the longest time, I mean, it was almost like the movies [industry]. It makes it very hard to get into the industry in the first place because you are who you know. (Sam Johnson)

While he is primarily criticizing the process of only hiring at "two degrees of separation," this participant also acknowledges that there can be some benefits to this kind of networking approach.

Sometimes, the need to strictly adhere to more formalized processes can hinder an organization's ability to hire new members quickly and when they are most needed. One participant from a large organization described the challenge that time pressure can put on adhering to a lengthy hiring process, saying:

> I think it's just the pace at which we move. […] And that pace touches a lot of things in the industry. A lot of times, when we're hiring new people, we grill them to death on their experience. [But] it actually doesn't matter what you worked on before. […] Sometimes we get academics in, and we're like, "I don't care. Have you worked on games before?" And they're like, "No." [And] I'm like, "Then…" Because no one has time to sit down and train someone. You have to know, "Are you going to be a problem and are we going to have to babysit you every day?" Because if we do, we don't have time for that. So, it's weird how that frenzy kind of just touches a lot of little parts of everything.

Accordingly, using a more networked approach to recruiting members can sometimes allow organizations to more quickly find and integrate new members, thereby saving others within the organization significant time and effort.

4.6.3: Proximity

One of the less formalized ways that organizations can attract members is through proximity. For example, one participant described how both the recruiting process for and the diversity of most of her previous organizations was related to "who's around" in her local area, saying:

> Most of the game design work that I do is very small teams. And it's mostly—except in two cases—not professional work. So, it's very much up to who's around, who's available. Most of the work that I've done was in Boston. Only the solo work has been elsewhere. So, Boston is a fairly— It's a small, like, neo-tech-bubble city and that does influence the demographics of the city. It's a lot of people who work in tech—not even explicitly in game design—but educational technology, software design, stuff like that. Lots of startups. So, socio-economically, it's a fairly high-status city, which influences the demographics of the groups.

Similarly, another participant from a tiny organization described forming his current organization while finishing graduate school:

> So, I was wanting to make games for a long time. […] And as grad school started just kind of winding down, then I had free time and I had somebody else that was in kind of the same boat. I don't remember why I got started. I think [my co-founder] and I were just talking about game development. And then we decided to have lunch. And it was me and him and two other people that were sort of interested, but not *really*, not like we were. Originally, we were just coworking and making each other work on our own projects, but yeah. Ultimately, I had a project that was never— It was basically the classic project that never gets done, where you have, like, this really big scope and just one guy. And *he* had one that was very doable, but also very much had *been* done a lot. So, the combination— Since I am the harebrained scheme guy in the team, I had a harebrained idea for like, ''Oh we can do this same thing, but add multiplayer to it.'' Then we basically had like three or four months of meetings of me trying to show him how it could be done, and him thinking through if it's something he wanted to do. And then when he decided it was, then we made a company and started working. (Jeremy Johnson)

In both of these cases, recruitment-through-proximity involved both social and geographic factors.

Another form of proximity-based recruitment that involves social factors is recruitment through friends or acquaintances. As mentioned above, 5 total participants (across organization sizes) described becoming involved in their current organization through a friend or acquaintance. For example, one participant from a tiny organization described meeting his co-member, saying:

> Actually, most of the time I've been doing stuff, it's actually been with [the same collaborator]. [laughs] Because we actually met online through a friend and were like, "Oh, you like game design! Let's do something." And then we did. (Jonathan Kittell-Queller)

Another participant in a very large organization described how recruiting through a friend helped him out of a difficult situation:

> I'd been laid off. I was art director at a studio here in here in town. And we made a really beautiful, really fun game that made about $4. [laughs] And they had to lay off a significant number of the staff and I was one of them. And because it was a small studio, they weren't able to offer us much severance and [that] kind of put me in a little bit of a pickle, and I had some friends reach out. At the time [this organization] was growing and looking for people who had art director experience that they could parlay into their outsource management efforts, so I took the job. It's one of those jobs I was taking out of necessity, but it's turned out to be beneficial in the short- to mid-term. (Thomas Jung)

These examples show that connection through interpersonal proximity is a significant recruitment and hiring process for organizations of different sizes.

As with other "two degrees of separation" approaches, interpersonal proximity can serve as a shortcut for trust between potential co-workers. One participant particularly described how important this factor was for his newly-founded tiny organization, saying:

> I had known them in person, yes. Actually, that was a very important factor, now that I think about it. I had met them, and they're local, and I like them. I was like, "Oh, I know these people and I trust them." And this is kind of like my first project I'm working with, so it was like, I want to actually know who they are and have more of a trust factor.

In this case, both the quality of the potential members' work and the personal proximity were key factors in the decision to hire them into this organization.

4.6.4: Current and Previous Colleagues

Another way to quickly both assess the quality of the potential members' work and to establish trust is to rely on current and previous colleagues. This approach was described by 5 participants in organizations of different sizes. For example, one participant described meeting the other members of her tiny organization in her workplace:

> And as for my current indie project, I got involved in it— That artist I mentioned? So, the game we're working on together [is] largely that artist's idea. The team is

> three [members of that organization] and we're just doing this in our free time. […] And I think she brought me on— I don't think I was even her first choice, which is okay, I mean, no judgement here. [laughs] But I think she was just like, "Okay, well, what audio people do I know. This one can't do it. *This* one can't do it. All right. This one. [laughs] She's available." [laughs] So, it worked out.

Another participant from a large organization described how a culture of recruiting and hiring previous colleagues can transcend job roles, saying:

> I've noticed that development seems to be older because they came out here to get away from larger corporations. And so, they've been in the industry for 10, 12, 13, 14 years. And so, I think that's where a lot of [the divide between teams] comes from, is they hire a lot of their friends, too. Because a good half of—no, not half, maybe a third—a third of that dev team has actually worked on other projects before here in Texas. […] We're largely referral based, I think. […] When I started [at my current organization], half of the people were from [one other company] and then the other half were from [another company]. And most of those people have all done customer service jobs around this area when it comes to gaming. […] And as [some other big] studios dropped or moved away, they needed somewhere to come, as well—and so [my organization] has been scooping them up as they could.

Notably, in this case, recruiting through previous and current colleagues also had a direct effect on the demographics of the organization.

While drawing on current or previous colleagues can be an important strategy for any job-seeker, actively maintaining contacts may be particularly critical for individuals looking to found or manage a networked organization. One participant discussed how current or former colleagues had led him to most of his current projects, saying:

> As I said, I'm a freelancer. One of them is commercial work. A prior client connected me with somebody who just needed somebody who could do the kind of things I do, which is conceive of a video game. […] And they needed somebody to develop a video game idea for their property. So, a former client sort of connected them, like, "Hey, this guy can do that." I have another one who's— [So,] I'm an indie game developer. And it's a pretty well-connected community. And just somebody needed some video game design work. […] And they needed more design and problem-solving type of work. And so that's somebody I had known from around the industry. They connected me and I'm doing work for them. (Randolph Smith)

Just as with the tradeoffs of using a process of only recruiting and hiring through "two degrees of separation," the tradeoffs of relying on an established network of colleagues include potentially limiting the diversity of your organization. Accordingly, several participants described working actively to expand that network of connections as an important strategy for promoting the inclusion of underrepresented and marginalized groups. (I discuss the importance of expanding the network of connections for promoting the inclusion of underrepresented and marginalized groups in more detail in Chapter 6.)

CHAPTER SUMMARY

In this chapter, I have discussed some of the significant features of organizational structure that participants described in relation to their 19 different organizations, as well as some points where these features relate to diversity within the organization. In discussing the feature of organizational size, I described my process for developing size categories (tiny, small, medium, large, and very large) and addressed why the feature of size has a significant—if not the *most* significant—impact on the structure of an organization. I also discussed how participants' own ability to quantify the number of members within their organization was related both to the size of the organization and to other features of the organizational structure. Some particular points where the size of an organization is related to diversity include the impact that adding even a single participant to a tiny organization may have and issues related to differences between teams that may develop in large organizations (especially as they grow by adding members or even teams of members).

Next, I discussed structural features involving task division and allocation within these organizations, especially the extent to which specialization within these organizations is related to both the organization size and the general model of the

organization. All small, large, and very large organizations employ a compartmentalized structure of job roles and/or tasks to some extent; participants described these role-related compartments as both "departments" and "teams." Participants discussed a lack of direct communication (other than some coordination between leads) between several departments, with the division between art and programming being discussed with the greatest frequency. In contrast, the size of tiny organizations prevents any of them from having strict "departmental" divisions, although these organizations still vary in the degree to which members are assigned strictly-defined tasks and clear job roles. While institutional adhocracies allow for some degree of cross-cutting in tasks between departments and divisions by shifting some of the focus from the department to the project, nearly all tiny organizations (and the tiny-small organization) adopt a more networked approach to task division by going beyond the departmental structure to be fully project-oriented and to connect people in a relatively flat organizational structure. Finally, flexibility in role definition and task assignment can be driven by time constraints, sudden needs for skills that were not currently being met, or even other interpersonal factors related to diversity (which I discuss in more detail in Chapter 6, as related to extra or invisible labor for members of underrepresented or marginalized groups).

I additionally discussed challenges found in organizations of every size that are related to the duplication of tasks or gaps in the work, including: how important tasks that are not clearly delineated may be ignored, the difficulties of overlapping work assignments, and the importance of balancing clarity of tasks with encouraging creativity. Many of these challenges particularly affect organization members from underrepresented or marginalized groups (which I discuss in more detail in Chapter 6). Due to the ratio of the large amount of work to a small number of members, it is more

likely for tiny organizations to struggle with gaps in task completion—thus leading to discussions related to increasing the organization size or contracting out work. While balancing each member's opinion and needs equally within a flat organization may be the ideal, certain members can still find themselves trying to address critical gaps, with members of underrepresented groups ultimately being unfairly pressured to do undesirable tasks. In contrast, larger organizations with full-time employees may be concerned about a lack of available tasks for specific members, and the role of ensuring work for others may fall on particular teams or members of an organization. Additionally, while the burden of creating a balance of task clarity and room for creativity may sometimes fall primarily on specific job roles—especially in larger and less flat organizations—many participants from organizations of different sizes described how such negotiations eventually impact some aspect of their collaborative work. Sometimes, a strong division between tasks can lead to greater freedom for creativity—especially if there is a strong degree of trust between members and across job roles.

After discussing task division and allocation within these organizations, I next addressed the mechanisms by which work is coordinated—starting with the degree of interdependency between workers. The level of interdependency within participants' organizations is not strictly correlated with the size of the organization, although most organizations larger than "tiny" tend to have a high level of integration in at least some aspects. In more highly-integrated organizations, coordination through the centralized creation and management of formalized (and documented) tasks is particularly important. For organizations larger than "tiny," however, departmentalization can also lead to varying degrees of interdependency between—and within—specific departments. At the same time, the highly collaborative and inter-disciplinary nature of video game design

makes it very difficult (if not impossible) for work to be completely independent in any organization.

I further discussed the structural feature of coordination in terms of span of control and the flow of information/communication within participants' organizations. All organizations larger than "tiny" (including the tiny-small organization) have at least some degree of hierarchy. Sometimes, however, even strict spans of control within larger organizations might be relaxed at specific times or for specific individuals. While the importance of the role of the team lead in coordinating between departments was discussed by most of the participants in organizations larger than "tiny," there may be some flexibility in communication flow even within more bureaucratic approaches. Other coordination issues in bureaucratic structures may be caused by over-emphasizing rule-following and by entrenching managers who are focused on "guarding their turf," in addition to the accretion of excess layers of procedures and paperwork. While none of the tiny (or the tiny-small) organizations that participants described could be considered to be highly vertical hierarchical organizations, they are not all completely flat organizations.

While all participants in organizations larger than "tiny" described the presence of game-focused teams within the organization, many of these teams still interfaced with the organization through other coordination mechanisms described above. Additionally, although many participants across different organization sizes described some form of consensus-building coordination within their team or department, this process is especially relevant for tiny organizations that essentially function as a single, highly cohesive project team. The process of equal and collaborative coordination around values can also have an important impact on making important decisions about the design of a game, including having a significant impact on the team's understanding of diversity within the game. This type of coordination also potentially allows for greater input of

diverse team members, including members from underrepresented and marginalized groups—but only if all members are equally valued and considered.

I next discussed the process of decision making within participants' organizations, which is crucial for organizations of every size and interacts with all of the other structural features. All participants from organizations larger than "tiny" described at least one significant decision that was made by a manager, a team of managers, or the head(s) of the organization. Some decisions, while still primarily centralized, are also shaped by managers collaborating across departments. In other cases, however, management's lack of trust in an individual or department can have a negative effect on members' morale, especially when it seems to be aimed at specific departments. Many participants in non-management positions accordingly felt that important decisions affecting a specific job role should be made by (or at least include) members in that role.

In strong contrast to centralizing and specializing decisions to management, some organizations work to distribute the decision-making process as widely as possible; this approach is primarily used by tiny organizations. Participants in larger organizations described how offering the illusion of mutual adjustment or consensus in decision making—without real support—can create backlash. Accordingly, organizations should consider the full impacts of inadequately (or even adequately) implementing a consensus-building process before pursuing this kind of approach. When considering issues of streamlining and time constraints, the goal of "consensus enough" could also open the door to some middle ground in an organization's decision-making approach, especially when considering important decisions related to diversity. Additionally, relying on rotating and temporary leadership is another strategy that networked organizations employ to adapt to inherent uncertainties and shifting variables in the decision-making process and is most common in tiny organizations. Similarly, members in specific job

roles (particularly—but not only—roles such "founder" and "studio head") sometimes need to adopt key behaviors used by network managers, such as "activation, framing, mobilizing, and synthesizing" (Hoflund, 2013, p. 92). A focus on roles such as "creative director" in such models also illuminates the importance that single individuals can have on both the game design process and organizational dynamics.

Finally, my discussion of decision-making processes led me to address the important features of recruitment and hiring within these organizations. I discussed how the outcome of recruitment and hiring processes has a clear effect on the structure of the organization and interacts with each of the other salient features of size, task division and allocation, coordination, and decision making. In total, 18 participants mentioned hiring processes of some type directly and the other 2 discussed recruitment processes more indirectly. Additionally, participants discussed aspects of recruitment and hiring almost exclusively in terms of their own hiring or in relation to the inclusion of diverse demographic groups within their organization.

In general, formalized recruiting and hiring processes are most common in larger and more bureaucratic structures. Several participants from organizations larger than "tiny" discussed feeling that—although they were not particularly familiar with their organization's formalized hiring processes—they did not have any particular concerns in terms of their organization hiring individuals from diverse demographic backgrounds. Very few participants, however, described their own role within the formalized recruiting and hiring processes of their organizations in any detail. Recruitment and hiring processes that are not strictly formalized tend to involve networking approaches. The majority of these approaches fall under some form of what one participant described as being "two degrees of separation from someone who had worked with" someone else in the organization, including based on proximity or current and previous colleagues. Lastly,

just as with the tradeoffs of using a process of only recruiting and hiring through "two degrees of separation," the tradeoffs of relying on an established network of colleagues include potentially limiting the diversity of your organization. Accordingly, several participants described working actively to expand that network of connections as an important strategy for promoting the inclusion of underrepresented and marginalized groups. (I discuss this strategy in more detail in Chapter 6.)

Next, I turn to discussing significant results that focus on the relationship of collaborative tool use and diversity within video game design organizations.

Chapter 5: Collaborative Work Tools and Diversity

This chapter discusses significant findings related to RQ2, which focuses on understanding the relationship between the use of collaborative work tools and diversity within the video game design process. In this chapter, I summarize the types of collaborative tools that participants use, as well as identifying some significant differences in tool selection and use between organizations of different structural features. I then discuss participants' understandings of the relationship between collaborative tools and diversity in their work, particularly focusing on the challenge of surfacing this relationship during interviews. Finally, I discuss a few key themes and examples of where participants identified diversity as potentially relevant to collaborative tool selection and use within their organizations.

5.1: Overview of Participants' Collaborative Tools and Their Importance

In this section, I describe the most commonly used categories of tools, as well as discussing how important specific categories are to participants' work in organizations of different structural features. I next discuss the degree to which participants felt that specific tools were (or were not) replaceable for their work. Finally, I discuss participants' awareness that the tools that were most important to them were not necessarily the most important for other job roles or to other individuals.

5.1.1: Categories of Collaborative Tools Discussed

In total, participants discussed several different types of collaborative tools that they currently use in their video game design organizations. Table 3 below describes these categories of collaborative tool type (including the most-frequently mentioned tools of each type) and the number in each category discussed across organizations of all sizes.

(See Appendix C for a complete list and count of specific tools described by participants, by type and number of organizations.)

Collaborative Tool Type	Number of Different Tools
Communication *(e.g., Unspecified email client, Slack, Skype)*	22
Work Coordination *(e.g., Jira, Perforce, Trello)*	13
Task Management *(e.g., Trello, Jira, Asana)*	10
Knowledge Management *(e.g., Google Docs, Confluence, MediaWiki)*	9
Version Control *(e.g., Git, GitHub, BitBucket, Perforce)*	9
Game Engine *(e.g., Unity, Unreal Engine, GameMaker Studio)*	6
File Sharing/Asset Management *(e.g., Google Drive, Dropbox, Internal folders)*	5
Audio-specific Tool *(e.g., Audacity, Absynth)*	5
Art-specific Tool *(e.g., 3D Studio Max/3DS Max, Illustrator)*	4
Programming-specific Tool *(Dev Studio)*	1

Table 1: Types and Number of Collaborative Tools Discussed

I developed these categories based on participants' description of the tool's use within their organization(s). Additionally, while many tools are only assigned to one category, some are categorized into multiple types. (See Appendix C for each specific tool's categorization. I have listed what I consider to be the primary use category first for each tool.) Finally, as I have only included tools that participants discussed, these categories should not be considered exhaustive of all types of tools (or specific tools) used within an organization.

5.1.2: General Importance of Tools

Although all participants said that their collaborative tools are either "important" or "very important" in general, not all tools and tool types are considered to be equally important. Overall, the most significant categories of tools that participants described—both in terms of frequency of use and importance of use—are communication tools, work coordination tools, and task management tools. There are some differences in how these tools are selected and used, however, between organizations with different structural features.

As I discussed in Chapter 4, coordination through the centralized creation and management of formalized tasks is particularly important in more highly-integrated organizations. While all such organizations employ at least one collaborative tool to help with this coordination process, task management tools are especially important for larger organizations. As one participant from a large organization described:

> We couldn't do it without them. They're absolutely critical. And the longer that we've gone on, I think, the more robustly we use these tools. We've got things in the asset lists now—like, we've got stuff time stamped so that an artist or whatnot can look and go, "Oh, this has changed since I first looked at this item." Without Jira and Alienbrain, it would all fall apart. (Sam Johnson)

Another participant described the extensive use of such tools within his very large organization, as well as how these tools were related to the flow of information, saying:

> We use Jira *a lot*, and it's multi-layered, the way they use it. […] [laughs] So we have Jira, which is sort of like the master. When in doubt, Jira will have all the info you need. […] Jira's one of those things where it only serves you as well as you serve it. […] In addition to that, we have this big Gantt chart that some poor producer has to—I guess they can't figure out a way to hook up on the back-end, so it spits out the Gantt chart due dates on the back-end for an individual. So, some poor producer has to go and look at some of these Jira tickets and modify the Gantt chart. And then we as individuals don't have access to the Gantt chart, but we get this little Smartsheets PDF every day that says, "Here are your tasks based on what Jira says is due for you this week." (Thomas Jung)

In this case, task management tools are crucial not only for the coordination of tasks within the organization, but also for keeping this coordination both highly-centralized and within a narrow span of control.

Participants from organizations larger than "tiny" also described the use of task coordination and management tools as having a significant impact on members across different job roles and departments. For example, one participant elaborated on the coordination between roles that these tools can allow within a large organization, saying:

> We all use the shared tools of Jira and Confluence. That's the main part that overlaps. Other departments use other systems—whether to track data [or other] things—but everybody's tasks are in Jira and Confluence. And I think that helps because it makes sure that everything's visible. If I wanted to check on the progress of a design document that I need before I can make my [Technical Design Document], there is a Jira task and it's assigned to somebody and so I know who to talk to. I don't have to keep bugging the lead designer and go, "Wait, who is this? Who's working on this? Oh, she is? Finally, okay—I'll go over and talk to her about it." [Instead,] I can just look and go, "Okay, it's this person." And maybe then I'll just ask the lead when a good time is to talk to her, because I need five minutes to figure out where things are. (Rachel Ripstra)

Notably, while this participant prefers to speak directly with a member of another team working on a task (and is enabled to by the affordances of the tool), "good practice" within this organization is still to check with the team lead first. As these examples indicate, however, all organizations larger than "tiny" likely could not function (or at least function in the same way) without some form of task coordination tool.

While task coordination tools are also important to most tiny organizations (especially highly centralized ones), these tools are not quite as universally or uniformly used in tiny organizations as in larger organizations. Participants from tiny organizations frequently discussed the "messiness" of their use of these tools or a lack of strictness with keeping tasks up to date. For example, one participant described how the organization's primary task coordination tool had not been updated to reflect recent changes, saying:

> Now, it looks a little bit weird because […] due to just shenanigans it's not actually up-to-date at the moment. And it underwent an organization reorganization recently. […] Trello is a little bit different in that it's as important as you give it credit for. So, it's only as important as you use it or—no, that's not exactly what I mean, because it's still important—but it's the kind of thing where you can accidentally forget to do it and thus lose the benefit of it. […] How much you need it shifts, and how much you use it isn't necessarily in tandem with that. So, we wouldn't fall apart without Trello, but it's demonstrably helped us out a number of times. (Jonathan Kittell-Queller)

Several other participants (including the participant from the very large organization, above) similarly asserted that the usefulness of such coordination tools ultimately correlates with the amount of effort that members put into using them. In tiny organizations with a more de-centralized approach to task control, this effort is more driven by a personal sense of usefulness than a formalized, organization-wide emphasis.

Additionally, participants in tiny organizations are often less likely to put extended effort into maintaining tasks that are not considered crucial for others' work. For example, one participant who had the authority to assign tasks to both herself and others described changing the level of detail within the tool based on the intended audience, saying:

> Yeah, I didn't add a [text] body because I'm like, "I know what I need to do. I just need to go do it." Yeah, so I actually consider my tasks very crappy. I only do it because— So, actually, we'll see ones that I've assigned other people. I probably, maybe, gave more direction if I assigned it to someone else. Hopefully. Maybe I'll be embarrassed. [laughs] (Sarah Abraham)

In addition to difficulty with maintaining detailed tasks for others using these tools, members of tiny organizations also discussed having some difficulty in keeping their task management for their organizations separate from other tasks. One studio head of a tiny-small organization discussed both the use of different tools on different projects and the contextual collapse of using another tool for managing tasks in both professional and personal life, saying:

> So, we're super, super messy [laughter]. […] There's a Trello board for the project with the interns. For the project with the client, I have a spreadsheet that tracks the different tasks, which would probably work better as a Trello board. But I already built it as a spreadsheet [laughter]. Oh, I feel like I'm missing something else. Oh, I use to Todoist for actually tracking the things that I'm doing on both projects. […] So, I have my grocery list [and] I have my personal Todoist to-do list. And then I have one for each of the two projects which is [usually] either things that I need to do, or things that I need to tell someone else to do. And yeah. It's probably not the greatest way to organize things. (MJ Johns)

This participant then elaborated that this use of multiple tools might not actually be best for keeping all organization members adequately coordinated, despite some of the benefits of this more de-centralized approach, saying:

> But I don't use [Todoist] collaboratively with the rest of the team, so. Right. Probably there would be a better way to do this—I'm thinking now that [might be] having one centralized placed where we are organizing things, rather than having very distributed different things. And I think having my team working on two very different projects is part of the problem with that approach. Because I do have some people that work on both. And I don't really want anything with the client project to sort of seep in. I don't want to share task tracking for both projects. So, I want them to be completely separate. But I do also want people to be able to know what's going on—If they're working on both—what's going on with the projects. Yeah. [That's] probably something we should address. [laughter] (MJ Johns)

Finally, these examples additionally show how, for tiny organizations, the use of *specific* task coordination tools can be somewhat variable—even within the same organization—and is considered to be less important.

In fact, only a few specific tools are considered by participants (across all organization sizes) to be irreplaceable to their current work.

5.1.3: Interchangeability of (Most) Tools

The specific tool that participants most commonly considered to be irreplaceable is the game engine (the software development environment that essentially "builds" the complete game by integrating multiple aspects), with several participants asserting that

their particular engine is critical to their organization. Many of these participants, however, felt that the particular game engine mattered not so much because of unique features of that specific tool, but rather because of the sunk cost and difficulty in switching to another tool once significant progress had been made on a project.

Most specific tools are accordingly considered to be (at least theoretically) replaceable—either by using different tools of the same type, or by adopting different ways of approaching the function that the tool serves. One participant from a tiny organization described both the nature of this replaceability of most tools and a collaborative decision-making process for selecting tools, saying:

> Well, for me communication is important. But it didn't really matter if we used Discord or not. It's just whatever is easiest for people. […] I never really make the ultimatum of like, "We're going to use this tool." It's more like, "What tool will work best for us?" And then we decide. […] Yeah, I guess I would say that the tools aren't really important, so much as the roles they fill. It's the roles that are more important—and if we didn't have a tool for that role, life would be a lot more difficult. And we do have roles that are currently unfulfilled by *any* tool—for example, an easier way for artists to get content into the game, and things like that. Sometimes tools are missing, and we don't have them yet, and I would *like* to make them but we don't necessarily always have the time for that. (Ava Pek)

Similarly, another participant from a tiny organization described the importance of tools in relation to the specific role that they play (as opposed to any particular tool), saying:

> Well, I feel like that could all be replaced by other things. With some file—if it's Drive, or Dropbox, or something that's easy. Yeah. [And] video conferencing is helpful just to screen share.

This perspective was not exclusive to members of tiny organizations, however, as indicated by this participant's evaluation of the importance of specific tools within his large organization:

> They're pretty much all vital. I'm not a fan of Skype, but some version of video chat is useful. And also, by the way, [so is] some of the stuff you use for working from home, right. […] But yeah. I mean, I cannot imagine working without

> them—if you don't have version control, if you don't have an ability to quickly reach out to your colleagues, if you don't have an ability to say, "Here's a document. Mark it up."

As these different examples indicate, however, there is still some differences between participants in their identification of which functions of tools are considered most important.

Accordingly, the degree of replaceability of specific tools is related to the specific tasks that individual members and different job roles may need to complete.

5.1.4: Different Collaborative Tools are Important to Different Roles and Individuals

Several participants expressed an awareness that the tools that were most important to them were not necessarily the most important for other job roles or to other individuals. For example, one participant qualified his initial assessment of "the most important" tool in his large organization to account for the work of artists, saying:

> Unity is the most important. […] Absolutely. But—well, for me. But you can't model inside of Unity. So, [then] we couldn't have character models. […] You can animate inside of Unity but it's not as good as animators do inside of Maya and [3Ds] Max. It's a simpler way to do it. But, yeah, we wouldn't have games if we didn't have the engine to make them.

Similarly, another participant from a large organization admitted the potential bias of focusing on the programmer role while discussing important tools:

> Well, nothing would work without some sort of compiler. I mean, [my] job is half planning and then half implementation. The implementation isn't collaborative or that interesting, generally, for coding, which is why I'm talking about the planning a lot more in the context of this interview. But all the planning and collaboration is pointless if you don't actually write code and create an executable that can run on whatever the platform is. The job is *that*. […] I mean, I can keep track of tasks and things with or without Jira. It all helps. But if I have a compiler and a notebook, I'm going to be okay. [laughs] (Rachel Ripstra)

As these examples show, many participants could acknowledge that other tools may be more important for different job roles within the organization, even if they did not always know the exact details.

In addition to acknowledging that a tool that may be most important for one member (or role) may not necessarily be the most important for others, several participants also discussed being sensitive to the fact that other members may actually *prefer* one tool over another. While this discussion was sometimes related to discussing different tool adoptions between different groups in the organization (which I discuss in more detail below in section 5.5), participants also discussed preferences more in terms of acknowledging productive differences—especially in tiny organizations. For example, one participant described his outlook on standardizing tool use within his tiny organization at length:

> That's why our team has different tools for each part of the team. […] I'm not making everyone on the team use Trello because some people really resonated with it, [and] some people didn't. And if I try to force people to use Trello, it's not going to lead to *anything* positive. But it doesn't matter because […] we're a small enough, agile enough, studio that I can be like, "Okay. We'll just move things around here a little bit. This tool is what you like? Cool. I'll just connect that tool to Trello. You use the tool you want, [and] I'll develop some little tiny piece of software that just connects everything across because that's easy to do." […] Yeah. Everyone totally does have different tools. If I were to say, "Everyone has to use this tool," [then] 100% there would be people who would be alienated, and unable to do work. And that would be sad. (Mitchell Garrett)

Acknowledging different preferences and working through a process of mutual adjustment (such as this participant describes) to accommodate them is particularly important for tiny organizations with members whose tasks might be clearly divided or less interdependent, or for tiny organizations that contract out work.

The importance of considering the perspective of diverse individuals and specific job roles is accordingly also related to the process of selecting collaborative tools within organizations, as well as to setting standards and norms about the use of those tools.

5.2: Collaborative Tool Selection and Standards of Use

In this section, I discuss the most common processes by which specific tools are selected within participants' organizations of different structural features. I then discuss the extent to which these organizations have established standards and/or norms around the usage of these tools, once they have been selected.

5.2.1: How and Why Specific Tools Are Selected

When asked, "To the best of your knowledge, could you please describe how or why these particular tools were selected for that project," most participants could not explain why/how at least one specific tool was selected for use within their organization. Some participants expressed some concern about or previous reflection on this lack of knowledge, such as one participant from a very large organization who elaborated on this issue, saying:

> I don't know. Yeah. I don't know. And a lot of these decisions are made—Because I know that a lot of times, I'll ask a question like that, and then the answer will be something very technical or has to do with security. […] So, it may be a great tool—the user interface will be great, all the features are there that we need—but it doesn't have the right level of security protocols. They just won't use it, or they'll use a lesser tool that does. So yeah, it just seems to depend. Or the whole Google Drive versus Perforce thing, which I don't like, but they did it anyway. So, I don't know, and I often find myself asking questions like, "Why are we using this?" Even the editor that we use for our game—which, [when] every artist who has started working in it, they'll turn around to the person next to them and ask, "Why are we using this?" […] And there's been many, many instances where we're like, "Why are we using this?" […] Nobody really quite seems to have a really good answer for it. […] But now, we're committed. We're deeply, deeply, deeply committed. Short of starting the game over, there's no way we can

> transfer that data to another platform. So yeah, nobody likes it. [laughs] (Thomas Jung)

In this case, the ability to select a tool that conforms to security requirements or to "start the game over" using a different tool could only be made by (or with) managers at the highest level of this bureaucratic organization. In addition to this participant, 3 other participants clarified that their uncertainty was related to the fact that they weren't involved in the selection process because it was made at a higher level within the organization. Participants with uncertainty also explained that these tools had been in use since before they started working in the organization (4 participants), or that these tools were used primarily by members in other job roles—and thus were considered to be under the purview of that role (5 participants).

5.2.1.1: Fitting an Existing Workflow; Size

Many participants, however, were able to provide specific rationales for how and/or how particular tools were selected. Several participants discussed the importance of fitting a tool into an existing or evolving workflow, as did this participant from a small organization:

> For a while, we were trying to use Slack as kind of like an internal messaging service and no one used it, so it kind of faded away. […] I think, at least for our work environment, it didn't fit the flow of work, where email is something you can be like, "I am on this and I'm going to send out a message and that message is done until I get a reply. [So] I'm going to back to work on something else." Whereas Slack was more like, "I have to be invested in this until I get a reply, so I can reply, so they can reply, so I can reply," and it was more frustrating.

This example also highlights the importance of the size of the project or the organization, as this participant also clarified that the size of his small organization allows members to directly interact with each other, especially face-to-face. (I discuss this in more detail in section 5.3, as well.) Another participant discussed how a sudden change in size would

also affect the workflow of her tiny organization, and thus potentially precipitate the need to re-evaluate the current tools, saying:

> Honestly, if it accelerates a little bit—if all of us do suddenly need to work together at the same time—I would probably actually purchase Jira and move to Jira instead of Asana. Although that would mean re-setting up the tickets, so that would be a big pain. I think it's acceptable for a small project, but I think for anything a little bit larger, [then] I think having even a better structure with ticket numbers, and just more information about it, works better. So, I think tools are important for sure. I think on small projects like this you can get away with less tools or the ones that are affordable. (Sarah Abraham)

This example also highlights the importance of cost in making tool selection decisions, especially in tiny organizations.

5.2.1.2: Cost; Upper Management

In total, 5 participants discussed relative or comparative cost as a relevant factor in selecting a specific collaborative tool within their organization. Considering the cost of tools both individually and collective (the total cost) is particularly significant for tiny organizations. As one participant described, the decision to "spring for" a particularly critical tool is not taken likely:

> So, a lot of the tools we use are because we are allowed to use them in a commercial capacity. And we can't use tools that, for example, require an upfront cost that is too high for us to pay. So, a lot of our tools are either free or have the stipulation that they are free until you make more than $100,000 in a given year. But sometimes, in other projects, we will spring for a tool and purchase it, and use it for that project. But, usually, it wouldn't be more expensive than a hundred or two hundred dollars—and we would do that for maybe one tool at most. (Ava Pek)

While participants from tiny organizations are particularly aware of the cost of specific tools, this consideration is also important to larger organizations. For example, one participant described how his large organization factors cost into making tool use decisions along with other factors:

> Low cost. [laughs] […] Unity is chosen for various reasons. […] And it was probably cheaper than Unreal at the time. […] [And] the SVN is free. It's donation-based—I don't know if we donate. [laughs] I hope we do, because I mean, we kind of owe them. I don't know if we do or not. But that's a business decision that none of *us* make.

Once again, this example also highlights the importance of upper management in making such decisions within more bureaucratic organizations. Another participant from a large organization similarly discussed the role that members of upper management play not only in making decisions based on cost, but in considering other factors in tool adoption, saying:

> The engine we use is Unity. That [decision] was made by the technical director—the head engineer of the studio—in collaboration with primary engineers, senior engineers, and lead engineers about what the options were. There's so many considerations when you're dealing with—Does it work on the platforms we want? How expensive is it to use? How quick can we get people ramped up on it? What languages does it support? So, they make the evaluation. They make the decision for what core engine we want—or do we need to develop our own, which is very expensive. […] There's so many good engines out there right now that I would guess it probably makes financial sense to use a shared engine, unless there's a specific need, and then just edit it as needed. (Rachel Ripstra)

As this participant describes, tool selections are not always made for a single reason—organizations frequently weigh the importance of several different factors when making these decisions.

5.2.1.3: Ubiquity/Industry Standard

Another such factor that larger organizations consider is the presence of tools that are considered to be "ubiquitous," or standard within the video game deign industry. In total, only 3 participants—all from organizations larger than "tiny"—directly ascribed the selection of a tool to this reason. One participant from a large organization described the rationale behind selecting several tools in such terms, saying:

> Atlassian's toolset is good and pretty ubiquitous. Perforce is pretty ubiquitous. […] Yeah, I mean, I think it mostly comes down to, what are the tools that are the best that have wide acceptance? Or that were already in use, in some cases.

Another participant similarly described his large organization's selection of a game engine, adding that this "ubiquity" also meant that greater support was potentially available:

> There's really two engines that are ubiquitous in the industry. And it's Unity and it's Unreal. Unity has built a reputation up for several years of being easy to develop for. It's quick, it's easy to iterate on, it's got a big user base—and so, a lot of forum activity. So, if you've got a problem, [then] chances are someone's encountered it and found a solution to it. And so, that's helpful.

Unlike these examples, selecting a tool based on ubiquity or industry standard does not seem to be a particularly significant consideration for tiny organizations. Another rationale that this participant mentions here—the relative ease of use—is, however, more significant to tiny organizations.

5.2.1.4: Ease of Use

Several participants discussed the ease of use of specific tools as relevant to their organization's selection of that tool. One participant from a tiny organization discussed how certain collaborative tools were selected based on the ability for multiple people to easy make the best use of certain features, saying:

> Trello has Google Drive integration, so when we have the cards, we can link straight to Google Drive through Trello. It makes it super awesome. When someone has a work in progress, everyone can access it. Multiple people can work on it at the same time. And it's connected to the card, so as soon as it gets done, you press a little button—boom—it marks the Trello card as done. Awesome. Super easy. Takes no work. (Mitchell Garrett)

He then elaborated that "ease of use" was perhaps the *most* important factor in his approach to evaluating collaborative tools, as well as in his approach to facilitating those tools for his entire organization:

> If you want people to use collaborative tools, you make them easy, because otherwise, they don't [use] them. Not because they're lazy, but just because it takes mental effort. And they spent a bunch of mental effort working, so they don't have [extra effort to use]. […] So, I tried to take that philosophy and apply it to the development tools—because, quite frankly, if I explained to [my co-member] all of the stuff that I did to make it work, he would be like, "Okay, cool." [He] wouldn't care. He would nod his head, and he would be polite and courteous, but he wouldn't care. And I'm not doing it to be like, "Oh, look at what I did. Isn't it so cool? Praise me," or whatever. But if I make the tools easy to use and tie everything together, and make it where they don't *feel* like it's any work to get stuff done, [then] it's great for me. Because then at the end of the day, I want to release a game. And it just increases the flow of content that I keep getting from the other creators. And to me, that's all I need. (Mitchell Garrett)

Another participant from a tiny organization similarly described the need to make tools as easy as possible to use for collaborators from diverse roles, saying:

> Again, for me, my preference is simplicity, ease of use, immediacy. I've worked with writers and artists who just literally will never figure out how to use any video conferencing software, no matter how simple it is. So, it's just those type of considerations. Things that just work, do one thing really simply, aren't trying to solve the world's problems. (Randolph Smith)

As many of these examples indirectly address, what makes a tool "easy" to use is often related to degree of familiarity that individuals have either with that tool specific tools or with tools that are very similar in some way.

5.2.1.5: Familiarity with Tool

Being familiar with a specific tool is the most commonly-discussed reason for selecting a collaborative tool to use in video game design organizations—in total, 11 participants directly referred to prior knowledge of or experience with a tool as an important factor in their organizations' decisions. For example, one participant described the decision to use specific programming-related tools, saying:

> Well, we chose Dev Studio because most people are familiar with it. The languages that we develop in are C++ and C#, which are supported by it. We *can* use other compilers as needed, but we don't try to create multiple solutions. […]

> Most people have used it before. But it's not— Like, if we're building for Mac, we have to use the Mac compiler, so we usually do primary development in Dev Studio, and then make a new solution and just kind of make it work on Mac when we have to [laughs], just because everybody else uses it. (Rachel Ripstra)

While in this case there might be some tacit assumption about what "most people" in a job role might be familiar with, this organization is attempting to accommodate as many members as possible, as easily as possible. Another participant from a tiny organization described undergoing a learning process in order to use a tool that another member was familiar with, saying:

> But as far as why we picked just *those* tools, we didn't start with Trello. I didn't know about Trello. I initially got recommended another thing that was Trello-*like* by another developer at some meetup up here in Austin. And I went through that one and I was like, "This one kind of sucks. It's okay, but it's not perfect." And then [another member] was like, "Actually, this reminds me of Trello that I used back in college." And I was like, "Cool, let's use that." Tried it out and [was] like, "No, this totally is better. Let's switch to it." (Mitchell Garrett)

As this example indicates, using a more collaborative approach to selecting tools may be particularly important for tiny organizations that function primarily as single small teams and use those tools extensively across different roles or tasks. Additionally, tiny organizations that include contractors may find it crucial to employ a process of mutual adjustment that allow members to use familiar tools, especially when their work is less integrated with other members.

The approach of selecting a tool based on familiarity is particularly related to the overwhelming use by tiny organizations of tools within the suite of Google online collaborative tools—at least 6 tiny organizations and the tiny-small organization use one or more of these tools. (Only 1 participant from a larger organization described using Google tools). One participant from a tiny-small organization discussed this use of Google tools in detail, saying:

> Google Docs—I think I have an unhealthy addiction to Google Docs because [of] how convenient they are. Before I used Google Docs, I used to use Word documents and Excel spreadsheets a lot. But having it saved locally on my computer meant I always had to have my computer in order to check things. And then, if you're emailing them back and forth, anytime you make a new change, you have to email a new version. But now with Google Docs, everyone has the same exact version updated, all the time, real-time, on any device. And so, I use it because of how versatile it is. And flexible. I do know that some people have hesitations about using it because of how weirdly possessive Google is with information that's saved on Google Drive. And maybe that's something that I should be more concerned by, but I think if Google ever comes after me then I must be doing something good to attract their attention. [laughs] (MJ Johns)

In this case, coordinating with diverse members—especially contractors—is also a key factor in the selection of Google tools. Selecting collaborative tools based on the rationales of both ease of use and familiarity, however, can potentially have impacts for the inclusion of underrepresented groups within video game design organizations, as these approaches raise significant questions about *who* certain tools are easy or familiar for. (I discuss this more in Chapter 6).

Finally, the least frequently mentioned reasons for selecting a specific collaborative tool include: security requirements, simply being "outdated," the ability to easily "onboard" new members, and through trial and error. In addition to the more general rationales discussed above, 7 participants discussed making switches or upgrades to a new/different tool due to specific feature improvements in the tool (different features and different tools). While, overall, all participants were able to offer some explanation for why at least one tool was selected, these explanations were not equally detailed.

Additionally, certain participants seem to be better positioned to offer such explanations.

5.2.1.6: Participants with Answers

Notably, most detailed explanations of why specific collaborative tools were selected were given by participants who were in some position of direct control over tool selection and use, or of the organization more generally. These participants were either team leads or department heads in large organizations (5 participants) or founders/studio heads in tiny organizations (6 participants). Being more involved in the decision-making process accordingly has an impact not only which tools are selected, but also on an individual member's understanding of *why* those tools were selected—which can potentially have an impact on their own sense of agency about those tools and about their work using those tools.

Once tools have been selected, organizations must figure out to use them—including developing formalized standards and norms.

5.2.2: Establishing Standards and/or Norms Around Tool Use

In addition to having some difficulty in discussing collaborative tool adoption and use, participants also struggled somewhat to identify standards and norms in how those tools are used. In the sub-sections below, I discuss themes around the few examples that participants shared, including the differences between formal standards and informal norms of use.

5.2.2.1: Some Formal Standards

Participants discussed very few specific examples of formalized standards around the use of collaborative tools in their organizations, and all such examples came participants in organizations larger than "tiny." One participant from a large organization described how the current growth and re-structuring of the organization is reflected in the ongoing development of standards around collaborative tool use, saying:

> Oh, man. I think people are still trying to figure that out. With the amount of different iterations this company has been at, I think there's been a lot of, "Let's go in this direction," and then something changes, and now we have to just completely figure out where we're going from there. […] I think within the past—I want to say, six to eight months—they've been trying to do a lot more centralization of everything and […] trying to standardize a lot more. And so, they've been making large pushes for that, and that's primarily where the use of Slack is coming in, and they're reducing some of those channels. Some of them are locked because they know that it's a proprietary thing, so security says that we actually have to lock that one down so no one else can see it or use it.

Another participant from a large organization similarly discussed the fact that while the organization has implemented strict standards for some tools, the usage of other tools remains more flexible:

> I would say it's actually pretty haphazard. There are certain things where it's like—yes, we have certain conventions. And there's others where we just don't have a system in place. So, I feel like Confluence has been reorganized at least two or three times. […] But there's a lot of stuff where it's just kind of, "Eh, just figure it out." So, there are some studios where there's a very specific like, "You must follow this process," and it's very like rules matter more than logic. […] And there's other [studios] where it's just chaos and everybody's doing stuff differently. We're, I think, kind of in a nice middle area, where there are a few things where it's like, "Yes, this is codified. This is how we do this." And there's other stuff where it's a little fast and loose. Right? So, like, in Jira to this date for design, we're not writing acceptance criteria for every story. It's just like, "Here's a task," as opposed to other studios where it might be like, "No, this is what has to be in every Jira for a Jira to be accepted." But it was only recently that we put together, "Here's the process for a voice-over." […] So we now have a spreadsheet that says, "This is how we're doing this." And I don't know if it'll—Right now, it's a spreadsheet that's checked in or checked out—if you're making changes—and then checked back in for version control, so you can see who made what changes when and that kind of thing.

As seen with both of these examples, a complete and formalized standardization of all tool use is apparently rare—even in larger and more bureaucratic organizations that do have *some* formal standards.

5.2.2.2: No Formal Standards

While several participants across organization sizes identified a complete (or nearly complete) lack of formal standards around collaborative tool use, this response was most common from participants from tiny organizations. One participant from a tiny-small organization emphasized the difficulty in establishing standards, especially across different projects:

> I would say [we have] very little [standard ways]. We are a mess. We are a hot mess. We exist by coffee and miracles [laughs]. Yeah. There's very little overlap, very little similarity between the two projects, and even between individuals—like, some contractors I work with [in] a certain way and some I work with [in] a different way. So, it's kind of a case-by-case basis. Both for what makes sense for the type of contract I have with them and also what they're most comfortable with, and also which project they're on—because the two projects are so, so different. (MJ Johns)

Similarly, another participant from a tiny organization emphasized the need for mutual adjustment to accommodate different networked members' personal styles in using tools, saying:

> I didn't want to [enforce any standards] because there was only one person on each area. It's like, whatever is easier for them. I guess there was some things, like for animations— Like, if there was something that wasn't working, then we would have—then we renamed things. [But] I wanted it to be as easy as possible for them. […] It was just that the project was small enough that it wasn't worth creating all these structures just to build something that didn't warrant it. If there were multiple artists, and they were naming things differently, then that would have created a problem, but he was a professional.

This desire to avoid strict standards is not exclusive to more networked organizations that employ contractors; several participants from tiny organizations that function primarily as a single team expressed a similar concern with overly regulating members. As another participant from a tiny organization described:

> I mean, for the most part, you don't make rules—because if you make rules, rules are gross. People don't like them. […] And so, having strict rules in what [a

> member] could do, that would inhibit the free flow of ideas. Or some people just don't like Discord, or they don't like talking with voice, or they don't like whatever. Everybody has different preferences. So just no rules. Total anarchy on what form of communication you use. The only thing that's required is just put it on Trello, and I make it so easy that everyone just does it by instinct and habit, and no problems have ever really come up. (Mitchell Garrett)

For the reasons that these participants discuss, tiny organizations almost unanimously avoid creating formalized standards around collaborative tool usage. Instead, members of these organizations are more likely to create informal norms around the shared of use of tools, and only as necessary.

5.2.2.3: Informal Norms

Participants across different organization sizes discussed the presence of norms of behavior around tool usage that were not strictly enforced through any formal mechanism within the structure of the organization. Several participants discussed adhering to specific norms out of a sense of professional courtesy, often related to past personal experience. One participant from a very large organization described the frustration that poor norms around tool usage can cause, saying:

> Yeah, in my experience that's really frowned upon—the useless [Perforce] comment. Yeah. Because it doesn't do anybody any good. Even if it's brief—And I've lectured artists who have worked for me in the past, "Just don't write a bunch of swear words in there and chuck it in. That really doesn't do us any good." And most artists that I've worked with have had an experience in which they've needed something, and they needed to know the history of a file, and somebody has written a useless comment that's enraged them. And so, it's almost like, "oh, that upset me five years ago, so as a habit now I try to—" It's almost like a courtesy. (Thomas Jung)

Similarly, another participant described how violations of such "courtesy" norms are typically handled within his large organization, adding:

> Yeah. I think most people that have seen where [using a tool in that way] can go wrong see the value in making it right. So, 98% of the time I've ever had one of these conversations it's like, "Oh, no. That's a good idea, yeah. Let me get that for

> you. It's no problem." Sometimes it's hard to mention those things because there are a lot of people, like, "Oh, I don't want to offend them. I don't want to step on your toes or anything like that." Yeah, it's all good. If you always come from a place—and this is something you learn probably in any discipline—[where] if it's criticism or if you have to talk to someone about something they did wrong, make it about the *thing*, not *they* did it wrong. It's like, "No, this is wrong. Could you change that real quick?" It's like, "Who cares if *you* put it in wrong or not. It doesn't matter. But here's what wrong and why it's wrong. So, someone has to change it."

Notably, in both of these examples the sense of courtesy that members feel is likely related to interacting with others in the same department, who are more likely to have had similar experiences—as opposed to members in different job roles.

Another important reason that participants gave for adhering to informal norms around collaborative tool usage is a more generalized sense of "etiquette." For example, one participant from a very large organization described a specific example of how norms around a communication tool are enforced, saying:

> A good example is how we handle Skype. We have official channels, which are named a very specific way so that people know that this particular chat has to do with this particular room, or this particular feature, or this type of information. And then this chat is for goofing around only. And it happens *at least* twice a day, where someone will decide to be funny on one of the official chats, and immediately someone—and it's not always the same person—will jump in and say, "That should probably go into 'fun important,'" [which is what we call] the general goof around chat. And nobody gets offended. Everybody understands that that's the way it is. Yeah. […] Yeah. So it's just as interesting that, yeah, sort of like that etiquette has grown organically. […] For a short time, it seemed to be [a boss policing it], and then that particular boss got transferred off to another project. And then other people just sort of stepped up and would call it out. […] [Because] the last thing you want to do is go to the bathroom for five minutes, come back, and be like, "I have 7,000 Skype messages that I need to filter through," and half of them are people posting funny animated GIFs. It's enraging. So, yeah. I've noticed that policing has become more something that the peers are doing for each other, versus a boss doing it. (Thomas Jung)

Such informal norms around etiquette often appear to spontaneously or organically develop, based on a shared understanding of how a tool should be used. One participant

from a tiny organization similarly described the formation of norms around tool use, without prior discussion, saying:

> I think for Google Docs it was, at that point—and I think it's fairly common etiquette—you don't edit other people's writing, you [just] comment on it, or you edit it but you leave it highlighted or in parentheses or something. […] To do maps and use variables in Twine you can either do it by using the GUI or you can type it in as part of the text that you're typing in. We found it easier to just type in, which led to some typos sometimes, but we all kind of collectively just did that. But that wasn't a decision we made together. That just happened that way.

As this example indicates, the formation of norms around tools based on a shared sense of etiquette is not only limited to larger organizations. As with tool selections based on familiarity and ease of use, however, creating a shared approach to informal norms could also impact the inclusion of members from diverse backgrounds—particularly if members have a different understanding of "courtesy" or "etiquette" in relation to their collaborative tool usage.

While participants were sometimes unable to clearly articulate behaviors and rationales associated with their organizations' selection of use and tools, most participants were able to give at least one specific example (as described in this section and in section 5.2 above). Very few of these examples, however, directly addressed topics related to diversity. In the next section, therefore, I discuss participants' understanding of the potential relationship between collaborative tool use and diversity within their organization.

5.3: Relating Collaborative Tools to Diversity

When asked (at the end of the interview instrument), "Is there anything else that you would like to tell me about the relationship, if any, between diversity and the use of collaborative tools within your work organization or group" (Q23), most participants

hesitated to respond and several even appeared to be somewhat confused by this question. Accordingly, potential relationships between collaborative tool selection and use and diversity were particularly difficult to surface during interviews without some additional feedback from me. While a few participants were able to immediately offer examples of where diversity and collaborative tools might be related, some simply did not see any connection between the two. Many other participants, however, responded to my additional prompting (or to my simply waiting for an extended period of time) by eventually either offering concrete examples or considering hypothetical situations. Additionally, several participants remarked either that they had never considered this potential relationship and/or that they were now interested in learning more.

This section therefore discusses the different responses that participants expressed when asked about directly relating their organizations' use of collaborative tools to aspects of diversity within their organizations. I have sub-divided the section into three different thematic categories of response: No Connection ("That I'm Aware Of"); Well, Maybe…In Certain Circumstances; and Definitely. And Here's Where.

5.3.1: No Connection ("That I'm Aware Of")

In total, 4 participants (from different organization sizes) either did not feel that there was a relationship between diversity and the use of collaborative tools within their work organization or group or did not feel able to offer an assessment. For example, one participant from a small organization responded:

> Not that I'm aware of. I mean, I think that everybody's allowed to use our email, and Jira and stuff like that, and make comments ,and push data. So that's all pretty good as far as I know.

Another participant from a large organization expressed a similar perspective, adding that the few differences in tool usage could be attributed to practical aspects of job role divisions:

> No, I think we're pretty collaborative when it comes to diversity on that scale, and I don't really see anything where anybody gets blocked out from anything based on being of a different group or anything like that. I don't know if I answered that. […] I think, mostly, [such differences] were organizational. It would be, the live ops team has their own chat, and they would invite select people that were specialists in the customer service department that could be part of that chat. But then they would forget about them a lot. I don't know if any of that was ever motivated by them being part of a diverse group.

Similarly, another participant from a tiny organization expressed an inability to fully assess this relationship without understanding more about the experiences of other members of the organization, saying:

> I'm not sure I could have an answer for that right now, because we are currently in the position where the people who are using the tools are [the] white males and then the other person, we're communicating explicitly through email because that's how it's fallen out. That's what they're comfortable with, and we don't even *know* what their identity positions are like. So, yeah. I don't really have an answer for that one. [laughs] (Jonathan Kittell-Queller)

Lastly, another participant from a large organization similarly admitted that his own perspective might be limited, saying:

> I can't think of any—I was even thinking about our HipChat emoticons. I think the thumbs up is a blue hand. It's not even a white guy. […] But, yeah, I have not seen anything that I felt was— It's entirely possible that I don't know because I have [a] white male privilege experience. And so, I don't see things because I don't know to look.

Accordingly, while these participants did not directly affirm a relationship between diversity and tool usage, their responses should not necessarily be taken as a strong rejection of a potential relationship. Several other participants were hesitant to affirm a strong relationship but did offer some potential connections.

5.3.2: Well, Maybe…In Certain Circumstances

Nine participants who were hesitant to initially identify a relationship between diversity and collaborative tools eventually offered additional thoughts about a potential relationship, or even concrete examples. Many of these participants engaged in a sort of think-aloud process, either with themselves or with me. The results of these investigations also varied in depth, as categorized in the sub-sections below.

5.3.2.1: Maybe This One Thing

Three participants suggested one aspect where they thought that diversity might be related to collaborative tool usage. For example, one participant from a tiny organization discussed a potential connection between personality types and tool usage, saying:

> Not in particular, I mean, I can't think of— When I think about tools, I think, collaborative tools in particular, I really think it is a matter of personality like in the Myers-Brigg sense more so than in the identity and background sense. […] So yeah. They do work better for some people than others depending on what the tool is. But other than that, not really. (Randolph Smith)

Similarly, another participant suggested a hypothetical situation in which images used in a communication tool might be considered offensive to certain demographics of organization members, saying:

> I don't know that I can think of anything super specific, but— Hypothetically, let's say that you're on Slack and there's a bunch of people using, I don't know, Pepe the Frog[50] emojis or something. *That* would suck. I have not seen that, though. So that's good. [laughs] Just party parrots everywhere. And no one's offended by those [laughs].

[50] A cartoon image of a frog face (turned internet meme) that has become associated with the political movement of the "alt-right" and thus is considered a hate symbol by many, due to the white nationalist tendencies of this political group.

In both of these examples, participants identified vectors where inclusion of diverse members in an organization might be challenged by tool usage—although these discussions were not particularly detailed.

5.3.2.2: "There's Probably Some Relationship There"

An additional 2 participants felt that there is "probably some relationship" between diversity and the use of collaborative tools within their organization, but struggled somewhat to articulate exactly what that relationship might be. One participant from a tiny organization discussed this idea at some length, saying:

> That's an interesting question. […] I'm not sure what the relationship is to that. It's probably just so— Like, it's like we think they're silent but there's probably some relationship there. But I don't know.

I responded by reminding him of something that he had previously discussed, saying "Well, for example, you mentioned that you wanted to try to use Git and get people on board with that. But they didn't have experience with that and familiarity. Do you think that's a disciplinary issue or an education issue or—?" He responded:

> Yeah. Yes. That's both. I mean, I think it is both. And also, it's a structural issue of like, "If this is going to take me longer than [doing it myself], I'll [just do it]." Yeah. […] I mean, just the more tech— Like, Git is like the most technical of the tools, right? I got into this through programming. And issues of inequity in computer science education and— So what does that all mean? I don't know. But I'm sure it's not the only instance.

Similarly, another participant discussed the idea that tool selection within her tiny organization might be related to either the structure of the organization or to personal values, saying:

> Yeah, I don't know. We just use whatever, we don't really think about it that much. I could draw some interesting parallels that might be interesting and funny but they wouldn't necessarily mean anything. […] So, for example, Git is a distributed versioning system. There is no central authority. And the sort of way

> we want to make our new company is also distributed, and doesn't necessarily have a central authority. […] In small teams, it's usually tools that people have been using personally for a long time and you just end up using those. So, I guess that's where the diversity in tools comes in, because I've had that situation before where people are like, "Well, I use Multitracker or I use Sunvox or I use FL Studio or I use Audacity." I'm like, "Yeah, sure. Go ahead. That's fine." So, we've had this discussion before in the imaginary game dev company we want to make, that [the other member] wants to provide a situation where the company gets group discounts for tools that people can use, whereas I'm like, "Well, maybe people don't *want* to use those tools." (Ava Pek)

In these examples, both participants expressed a certain ambivalence about tool selection—especially in terms of others' choice of tools—that may also be reflected in their lack of relative clarity about what a relationship between tools and diversity might look like.

5.3.2.3: "Oh, Actually…"

Additionally, 4 participants investigated potential relationships between diversity and collaborative tool usage through a lengthy think-aloud or conversation process. Several of these participants began by expressing an initial dismissal of any significant relationship, only to later discuss detailed examples or hypothetical situations. This was the case for one participant from a large organization, who elaborated:

> I don't think those two are necessarily applicable. I don't think you can link them within *my* organization. [pause] Oh, actually, there's one thing I can say. […] At one point, we had a programmer who was very visually impaired. And at points, we've had people who weren't necessarily disabled, but who had problems. And the company has always gone out of its way—see now that I'm thinking about it, I'm finding them—to accommodate them. Accommodation has been very easy. There was a guy, basically, instead of having a computer monitor, he had a 60-inch flat screen TV next to his desk. And he was staring at that. […] In terms of hardware. And I know that, if we had a specific disability come up that needed to use our tools differently, I'm confident that that would be handled instantly. It hasn't come up. So, I can't say it's happened. But I have no doubt that it would. (Sam Johnson)

Another participant from a tiny organization had a similar initial hesitancy to link tools to interpersonal diversity, saying:

> I have not thought about that. […] Yeah. Because to me, it's a tool. It's outside of the people who use it. But yeah, I mean I guess that's— When you think about like if you're working with someone who is maybe, like, somewhat sight impaired [then] it would make sense to use more audio tools. Or if you're working with someone who is audio impaired, [then] you would have to have chat logs if you do video conferencing. So, I haven't really thought about that and, like, to me, when you say that, I think about like more of the disability sense. But I think there also could be some people [who] are less comfortable, in one medium or another, And actually, it's another—an aside to that as well. This is another argument for professionalism, which is, like, if you're working purely in chat, [then] you can't detect sarcasm. So, I think, if you're communicating through text and someone's saying something that's, like, off-color as a *joke*, to me, that's always weird because I'm like, "I don't actually know what you mean by that. Maybe you meant it to be funny, but maybe not. I don't really know." […] So, I mean, that's why I, like, one: I'm a big fan of emoji. I guess as silly as that sounds it's actually like an essential in today's work environment. And two: again, just assuming that people are being serious, and just not saying things that will confuse people—even if it's meant to be light-hearted. So, yeah, I guess if a collaborative tool doesn't have emoji, that kind of actually does make it harder [for] just making sure that there's some way that people can sort of clarify things. (Sarah Abraham)

As with the previous example, this participant touches on potential challenges in tool use related differences in physical ability, in addition to potential cultural differences in communication.

Another participant in a large organization similarly began her discussion of tools and diversity by considering potential differences in ability. This participant then continued to think aloud about the potential influence of culture on tool usage and questioned her own initial perspective:

> The tools are all online. So the biggest diversity issue we have with the tools, I think, is in common with using anything on the computer, which is the interface mechanics you have to use the computer, mouse, and keyboard. And if you have trouble using those interfaces, then everything is gonna have those same hurdles, whether it's using Jira, Confluence, or Dev Studio. That that's the interface we use for everything. So, I don't know if there's much of a cultural difference. I'm

> not sure. The other reason I say I'm not sure is because when I started thinking about it, I started thinking about the sort of language of interfaces and how much we assume about that language. And I normally wouldn't think about that. […] So, there's an assumption about that. And that's true in games, too. […] And it's a language that we've assumed. And how much of that language is gaming culture? How much of that is other cultures? I couldn't say.
>
> And so, I had a moment of doubt. I was like, "Honestly, I don't know how much would that— There *is* a culture around that. How does that culture interact with other cultures?" I actually have no idea. I don't have any suggestions if there is one. I guess I'm curious now for analysis on that. […] I mean, I worked with one person who didn't have great control of his limbs. But I mean, he was able to type with his knuckles pretty quickly. He was pretty skilled at doing what he could for the interface. It wasn't as easy for him as other things. And I know other people will have other, even harder, challenges and that would cut off an ability there. […] There's all sorts of places in there where you could fall down. Can you think of the problem? Well, if you can't, that's a hurdle, but a necessary one. Can you put it into the computer? That seems a more soluble one, right? If you can't think through the problems, there's lots of reasons: it may just be education. [Or] you haven't thought through it. And maybe that's why a degree would be helpful. Now, you can think through the problem. Yeah. But I'm not sure. (Rachel Ripstra)

Notably, this participant was ultimately left with more questions—of her own design—than answers.

Another participant from a large organization followed a particularly significant similar journey, but through engaging in extended conversation with me. He began by expressing that he had no initial thoughts about this relationship, saying:

> Jeez. Never thought about that much. Oh, I don't know. How would tools facilitate better diversity? [long pause] I don't know.

When I reminded him of an example that he had discussed earlier about members in different job roles preferring to use different tools, he then added:

> Yeah, I think that's just a quirk. I don't know. This is weird. I think people's minds learn and use tools differently […] Have you ever used GitHub before? That thing, I think, is a nightmare. I hate using it. I just don't— It doesn't feel like I understand it right away, it doesn't feel intuitive. But engineers love it. Because it makes sense to them. […] I don't believe that has anything to do with

> diversity—like women, gender, anything like that. I think that's just a type of quirk of how brains think. I'd like to assume that—given my ignorance of the subject—I would imagine that is not something that is subject to diversity. I can't imagine someone from China thinking fundamentally differently than I am. I don't know.

I then referred to some previous research on how people from different cultures might actually ontologically categorize things into very different relationships and noted that, "it's interesting to me, how sometimes those things that we take for granted in our cultural or language background, sort of shape how we perceive things." He immediately responded, saying:

> Well, that does make me think of— There is potential gain there for, I guess, the Wiki-type format because that is a way to organize *thought*, right? And that's, "How is it game-related?" And typically, right now, it *is* a very, I guess, programmery way [to organize it], even in Wiki-form. Because maybe—sometimes I like to think of things as a web. [Like], there's the main thing, and then it goes out to the little, less important things—but that's still important—and then it branches out to lesser important things. But I could never *see* it like that. You know what I mean? And maybe [instead] I could see the importance of the topic, by, like, the bigness of the bubble. Like [when] you see those word heat maps, where people analyze the words people were searching; the bigger the circle, the more frequent the word. Maybe, yeah, there's probably a gain in there. [pause] Yeah. It's weird because I would imagine [that] if you were just to go "Hey, guys, there's a decision on high, where we're using this new experimental, weird, *totally diverse* wiki thing," that everyone's gonna go "Uhhhh, why do we have to learn this? Like, it doesn't apply to me, it was fine the way before." But if we *don't* that, [then] maybe it would be less likely that someone from another background would be as comfortable. I would imagine that if you want real staying power for those people, you gotta make them feel welcome. [So] that, hopefully, they don't have too many things where you're like "Well, that's just the way it is, get used to it. Just find another job if you don't like it." [Because] that's probably a very insular feeling. And you're like "well, all these people," and they're all white dudes. I don't know.

He concluded this discussion by adding:

> So, yeah. That's a tough one, though. Like, maybe there's a gold mine in there for software development and UI development.

As with the previous participant, while this participant was perhaps left with more questions than answers, these were at least questions that he (by his own admission) had not even considered before.

I include these previous two examples (at length, admittedly) in order to highlight both participants' ability to dig deeper into this relationship—even after initially dismissing it—and the extended, think-aloud nature of such a process. Without my asking participants this particular question—and then engaging with them at length—we could not have had these conversations that allowed these participants to investigate their own understandings of this relationship.

Finally, the last group of participants responded almost immediately with positive affirmations of a relationship between diversity and collaborative tool selection and usage.

5.3.3: Definitely. And Here's Where:

In response to this same question, 6 participants asserted that there is a relationship between diversity and the use of collaborative tools within their organization. One participant from a tiny organization responded enthusiastically, saying:

> I think it goes without saying that the two are intrinsically linked, because diversity is about *difference*, and difference is about different people, and collaboration allows different people to work on the same thing [laughs]. So how do you have one without the other? I actually don't quite know what that question means because it's pretty— I was like, "Yes?" […] That's why our team has different tools for each part of the team. There's a reason why I'm not making everyone on the team use Trello: because some people really resonated with it, some people didn't. And if I try to force people to use Trello, it's not going to lead to anything positive. […] We're a small enough, agile enough studio that I can be like, "Okay. We'll just move things around here a little bit. *This* tool is what you like? Cool. I'll just connect that tool to Trello. You use the tool you want, I'll develop some little tiny piece of software that just connects everything across, because that's easy to do." […] So yeah. Everyone totally does have

> different tools. If I were to say, "Everyone has to use this tool," [then] 100% there would be people who would be alienated, and unable to work. And that would be sad. (Mitchell Garrett)

Another participant from a tiny organization similarly discussed the importance of allowing diverse individuals to be able to work in the way that suits them best, saying:

> I think in the context of writing collaboratively, there are a lot of style conventions that people have. And this is just diversity of *thought* or expression or something. […] And it can be very hard to resolve those collaboratively. Because the point isn't necessarily a resolution, it's recognizing the individual style, but also fitting into the collective style or something. […] There was one document that had some reference stuff at the top. But then mostly it was individual notes that needed to be copied and pasted and into Twine. That's difficult. But that was the best way that we found to put everything in one place.

In both of these examples, participants describe ways in which tool use can be modified to adapt to diversity within members' working styles and preferences.

Additionally, a few participants also discussed how organization members with different backgrounds could potentially have an impact on the selection of specific tools. One co-founder of a tiny organization speculated on how increased diversity of organization members could have impacted the tool selection process, saying:

> I think that there's a chance that if we hired people not from a game design background, [then] they would have a better idea of other tools that would be useful to us. So, as it currently is, the diversity and like the work experience is what led to using Perforce. So, it's already contributed into the tools that we use, but definitely could contribute even more. […] Yeah. As well as [having] more ideas, because we tend to stick to the same sort of circles. So, finding out new things can be difficult when you're sticking to the same routine. (Robyn Haley)

Similarly, another participant from a tiny-small organization discussed how a particular tool had been selected to support a greater degree of diversity in the team, saying:

> So, part of the reason why I use Unity Collaborate, as I mentioned, is because of people not being comfortable with SVN. I do think there's a lot of assumptions that go into the types of tools that you're using. And assuming that everybody uses the same tools, which generally is not the case. (MJ Johns)

Notably, both of these participants had been part of the decision-making process for selecting their organizations' current tools—and had the authority within the organization to consider making further decisions in the future—which may encourage them to consider these decisions in deeper detail. Additionally, participants from underrepresented or marginalized groups may be more likely to affirm this relationship, as 5 of these 6 participants self-identified as being part of at least one such group.

In the final section below, I discuss in more detail the examples that participants gave in response to this specific question, as well as a few examples that surfaced during other sections of the interview.

5.4: Norms and Experiences Can Divide

Despite the overall challenges in addressing the specifics of tool use within their organization (especially in terms of diversity), a few participants directly addressed issues related to differences in tool use within their organization and how their current tools may not meet different groups' needs equally. In addition to giving specific examples of such cases, participants occasionally reflected these divisions in the way that they talked about tool usage among other groups (e.g., "that's just how programmers are"). These divisions can lead to certain sub-groups adopting separate tools, as well as to different groups using the same tool differently.

This section therefore discusses the most notable cases of how different norms and/or experiences around collaborative tool usage can divide organization members, including: dividing members within the same role, dividing members between roles, dividing members between demographics, and how differences in tool usage may (or may not) affect the equal treatment of organization members.

5.4.1: Within the Same Role

In total, 3 different participants discussed how aspects of tool use could divide members within the same (or similar) job roles. One participant discussed this division in terms of how individual preferences for and/or experiences could be used as a stand-in for evaluating the quality or the fit of an organization member, saying:

> Hardware choice is surprisingly divisive. […] Well, the reason I bring this is up is because, like, I've been saying that you should have different perspectives and different ideas about how to do certain things. But often, when you work with other people, you will want to assimilate in some way to the culture that you're in—and that's fine. And I'm not necessarily saying [that] what I'm about to say is a bad thing. But when you get onto a team, for example, as a programmer, people will bring up mechanical keyboards and how you should use them. And there is some sort of sense that, if you don't have an opinion about them or you don't use them, then you're not necessarily someone who is skilled or qualified. So sometimes, choice in hardware is, what I would say is, a red herring for how to evaluate someone. (Ava Pek)

This participant went on to discuss how this evaluation-by-proxy could extend to prospective members, as well, adding:

> So, for example, let's say you go work for a company and they're like, "Well you should use all these professional tools like Logic or Visual Studio," or stuff like that. But, like, people who don't use those tools or the hardware you're talking about aren't necessarily *worse* for the job. […] So, for example, for programming, people will sometimes want to talk about the rig you have back at home. Because there's sort of an expectation that you know how to build a computer, and that you *want* a powerful computer at home. And I've noticed that this isn't [as] much the case anymore, which is great. But it used to be something [that] people would talk about, or would talk about it and sort of use [it] as a way to get to know people or basically screen people. Where you're like, "Are you *with* us or are you separate from us?" So, hardware, surprisingly, has someplace in that, which is kind of interesting. Because, you know, only people who have *money* have expensive rigs. (Ava Pek)

Although this example does not necessarily discuss a direct effect of differences in tool usage on collaborative work, it does highlight the impact that norms around tool usage can have on creating (or enforcing) a specific culture within an organization.

Another participant from a very large organization described the impact that using different communication tools could have on dividing members from different cultures or language backgrounds within a team, saying:

> I do think that there's instances where [a tool] really works well or helps, and instances where it doesn't. Like, our team in Canada is French. […] They're French-Canadian, and they're, like, super French. And there's only a handful of people who speak English. So, in some ways, our collaborative tools which are based on typing or whatever, [can help] that language barrier. Because when you're on a conference call, or you're on a [video conference], it can be really hard. They'll have to stop, and they'll be like, "Excuse me, just a minute." And then [you hear] all this French in the background, and then somebody comes back in. Whereas, the typing seems to mitigate that. It helps to smooth that. I can imagine that, like— Like, we had a couple of guys—I think that they're working out of the San Francisco office now, but they're South Asian in origin—and they had very thick accents. And I could see how in [a video conference], where sometimes the reception's not that great, you know? I mean, I was sitting at a table with a guy and he was talking really fast, and there were multiple instances in which I had to ask him to repeat himself. And I can't imagine how that would be a significant challenge over [video conference], where you add a little static in there and it's like, "Oh, man, what did he say?" You know? So, I think maybe trying to take that into consideration—language barriers—when it comes to the type of tools that are used. […] So, [video conferencing], maybe not for people from another country where English is not their first language, but definitely some sort of typing interface which has multiple tools for us to help address that. (Thomas Jung)

In this case, the cultural differences in tool usage were due to external factors including language and nationality. Other participants, however, described how cultural differences between different job roles within an organization could shape different norms and experiences with collaborative tools.

5.4.2: Between Roles: Artists and Programmers

As I discussed in in Chapter 4, several participants described a separation between artists and programmers (or between programmers and everyone else) within their organization. This division was additionally reflected in several participants' discussions

of tool uses and preferences. For example, one participant from a large organization discussed different preferences for tool usage around coordinating and sharing design documents, saying:

> Confluence— Both of those were kind of our documentation areas, so they're in a browser. So you just go on there and add design documents or any documentation you need to have. Usually we do that in there. Sometimes, we lean on the old Alienbrain and put everything in there, but it's much easier to share that with *everyone*. Because some people— Like, programmers, don't like to use Alienbrain, they prefer using a browser-based kind of organization. So, Confluence is a better version of the wiki page that we had—it just allows more hyper-linking and editing, stuff like that. (Katie Roberts)

Similarly, another participant from a very large organization discussed differences between these roles in their usage and norms around a communication tool, saying:

> [Using silly gifs] seems to be pretty universal. Generally. The programmers don't seem to do it much. Yeah, but the designers and the artists—it seems to be pretty equally spread between the goof-offs. […] I think that when it comes to the programmers though, honestly, it has to do partly with this personality type—generally [they're] not that sociable. That's my experience. […] Just the goofing around. You don't really see them goofing around much. (Thomas Jung)

When I asked if there might be any programmer-specific "goof off" channels, he replied, "I don't think so. No. Yeah. Might be giving them too much credit [laughs]" (Thomas Jung). As these examples illustrate, different preferences between these roles are not limited only to more "technical" or role-specific tools but can also include organization-wide coordination and communication tools.

Several participants did, however, discuss different norms or preferences between these roles as related to tools that may be more oriented towards programmers—especially collaborative tools that use "versioning" systems to track changes made to the game project. In total, 5 participants discussed issues related to differences in experiences with, comfort with, or preferences for tools that involve version control. One participant

discussed how one of the most commonly-used tools could be challenging to people coming from different job roles and backgrounds, saying:

> But most of the large organizations, I feel like use Perforce, which artists *hate*. […] Yeah. I hate Perforce, too. [laughs] I mean Perforce is like— If you want to talk about scary version control, *everything* in Perforce is confusing. And they do it on *purpose* [laughs]. "Let's make people as befuddled as possible, so they won't want to press any buttons ever." I mean, I come from a computer science background, but any time I join a team that is using Perforce, I make someone else on the team sit with me the first time I commit. I'm like, "All right. Walk me through exactly how you guys commit." […] Because there is— Perforce just has a crazy amount of— It's meant to be a beast of a tool. […] And because of that, it is *very* intimidating. And there are a *lot* of ways to use it. And there are a lot of ways to use it wrong. (MJ Johns)

This participant additionally discussed the importance of selecting tools with these—not totally unfounded—fears and differences in mind (which I discuss more in Chapter 6).

Finally, it is worth noting that divisions between artists and programmers may not be as significant in tiny organizations, where members often have less strict role divisions. In fact, a few participants in tiny organizations described performing both art-related and programming-related tasks.

In addition to describing divisions between job roles, some participants discussed divisions between different demographics within their organizations.

5.4.3: Between Demographics: "Older People" and "Younger People"

Only a few participants explicitly discussed differences in norms or experiences with tools as dividing members from different demographics, and hardly any discussed such divisions at any length. The most significant such division is between members of different relative age. One participant discussed the adoption of newer communication tools within his large organization, saying:

> When it comes to communication, like email, or Slack, or messaging, that seems to be more split based on age—where you'll see the younger people kind of

> posting on the Slack channels and the older folk sometimes don't even have Slack on their computer, because they don't want to use it. (Ricky Llamas)

In addition to this direct reference to some division between "older" and "younger" organization members, a few other participants made more indirect references to age-related differences in tool usage. For example, one participant from a large organization similarly described some members' reluctance to adopt new tools, saying:

> I think it's just [a] "It's hard to teach an old dog new tricks," kind of thing. Because we have a lot of people that have been there on the [the same] project for ten years or something. So, they're stuck in this way of doing things and it's very hard to change their mind about doing stuff a certain way. (Katie Roberts)

Focusing again on the communication aspect of tool usage, another participant from a large organization discussed differences between individuals, saying:

> I still use very old-school [emojis] that are kind of ASCII-like, and then a lot of people still use the very new ones that are just the actual emoji face. I found that very interesting, even just in my age group, let alone any diverse culture.

As with examples in the previous sections, these participants did not fully discuss the implications that such demographic divisions might have for equality of members within their organization.

5.4.4: Separate but Equal?

Finally, while several participants described such divisions related to collaborative tool usage, hardly any participants explicitly articulated how these divisions might relate to established social hierarchies or could *specifically* impact marginalized groups in more than a generalized way. For example, one participant from a very large organization who described the impact that using different communication tools could have on dividing members from different cultures or language backgrounds (as I discussed above in section 5.4.1). While this participant acknowledged that using video conferencing tools might be more difficult for remote collaborators and/or collaborators

whose first language is not English, he stops just short of giving a detailed explanation of *why* this difference in such participants' ability to participate equally is important for the nature their collaborative work. He does describe how one particular team has adapted their interpersonal and work dynamics to consider the affordances of specific communication tools, saying:

> I think our French-Canadian team, like, they've structured their team to make use of the typing. You know what I mean? […] When we do [video conferences] with them, the English speakers are the only ones on camera and the French speakers are not. They're in the room. And you can hear them ask questions. But they have clearly structured their team around that language barrier. (Thomas Jung)

Once again, however, he does not fully articulate what the impact of such an arrangement might be—especially for the "invisible" members.

Several participants similarly discussed potential relationships between diversity and collaborative tools in terms of considering members with physical disabilities or impairments. (I discussed a few such examples in section 5.3.) Notably, none of these examples are related from personal experience and most are hypothetical situations that were spontaneously developed during the interview. As with the example above, participants did not fully engage in discussions of the greater organizational impact of any of these examples, either in terms of the equal inclusion of members from underrepresented/marginalized backgrounds or on the games produced.

In order to fully consider the relationship that such divisions in tool usage may have to the equal inclusion of diverse individuals, therefore, organizations will need to more deeply consider the practical outcomes—such as formal recognition of work accomplished, isolation or invisibility of certain work, or even promotion or firing—of the divisions discussed in this section.

CHAPTER SUMMARY

In this chapter, I have discussed different categories of collaborative tools that participants currently use in their video game design organizations. Although all participants said that their collaborative tools are either "important" or "very important" in general, not all tools and tool types are considered to be equally important. Overall, the most significant categories of tools that participants described—both in terms of frequency of use and importance of use—are communication tools and task coordination/management tools.

I then discussed some differences in how tools are selected and used between organizations with different structural features, including differences in the importance of task management tools and the interchangeability of specific tools. Coordination through the centralized creation and management of formalized tasks is particularly important in more highly-integrated organizations. Task management tools are especially important for larger organizations and participants from such organizations also described the use of task coordination and management tools as having a significant impact on members across different job roles and departments. Accordingly, all organizations larger than "tiny" likely could not function (or at least function in the same way) without some form of task coordination tool. In contrast, while task coordination tools are also important to most tiny organizations (especially highly centralized ones), these tools are not quite as universally used. Participants from tiny organizations additionally discussed the "messiness" of their use of these tools or a lack of strictness with keeping tasks up-to-date; in tiny organizations with a more de-centralized approach, the effort to maintain these systems is more driven by a personal sense of usefulness than a formalized, organization-wide emphasis. In addition to difficulty with maintaining detailed tasks for others using these tools, members of tiny organizations also discussed having some

difficulty in keeping their task management for their organizations separate from other tasks.

The specific tool that participants most commonly considered to be irreplaceable is the game engine, with many participants asserting that their particular engine is critical to their organization. Many participants, however, felt that the particular game engine mattered not so much because of unique features of that tool, but rather because of the sunk cost and difficulty in switching to another tool once significant progress had been made on a project. In fact, *most* specific tools are considered to be replaceable—either by using different tools of the same type, or by adopting different ways of approaching the function that the tool serves. Accordingly, the degree of replaceability of specific tools is also related to the specific tasks that individual members and different job roles may need to complete; several participants expressed an awareness that the tools that were most important to them were not necessarily the most important for other job roles or to other individuals, or that other members may actually *prefer* one tool over another. Acknowledging such different preferences and working through a process of mutual adjustment to accommodate them is particularly important for tiny organizations with members whose tasks might be clearly divided or less interdependent, or for tiny organizations that contract out work.

After covering the importance and interchangeability of different collaborative tools, I next discussed the most common processes by which specific tools are selected within participants' organizations of different structural features and the extent to which these organizations have established standards and/or norms around the usage of these tools. Most participants could not explain why/how at least one specific tool was selected for use within their organization, with some participants expressing concern about or previous reflection on their lack of knowledge. Participants clarified that their uncertainty

was related to the fact that they weren't involved in the selection process because it was made at a higher level within the organization, that certain tools had been in use since before they started working in the organization, or that these tools were used primarily by members in other job roles—and thus were considered to be under the purview of that role. Many participants, however, were able to provide specific rationales for how and/or how particular tools were selected, including: fitting a tool into an existing or evolving workflow; size; relative or comparative cost; the role of members of upper management; ubiquity or industry standards; ease of use; and familiarity. Being familiar with a specific tool is the most commonly-discussed reason for selecting a collaborative tool to use in video game design organizations, with 11 participants directly referencing prior knowledge of or experience with a tool as an important factor in their organizations' decisions. Additionally, selecting collaborative tools based on the rationales of both ease of use and familiarity can potentially have impacts for the inclusion of underrepresented groups within video game design organizations, as these approaches raise significant questions about *who* certain tools are easy or familiar for.

In addition to having some difficulty in discussing collaborative tool adoption and use, participants also struggled somewhat to identify standards and norms in how those tools are used. Participants discussed very few specific examples of formalized standards around the use of collaborative tools in their organizations, and all such examples came participants in organizations larger than "tiny." a complete and formalized standardization of all tool use is apparently rare—even in larger and more bureaucratic organizations that do have some formal standards. While several participants across organization sizes identified a lack of formal standards around collaborative tool use, this response was most common from participants from tiny organizations. This desire to avoid strict standards is not exclusive to more networked organizations that employ

contractors; several participants from tiny organizations that function primarily as a single team expressed a similar concern with overly regulating members. Participants across different organization sizes discussed the presence of norms of behavior around tool usage that were not strictly enforced through any formal mechanism within the structure of the organization. Several participants discussed adhering to specific norms out of a sense of professional courtesy, often related to past personal experience. Another important reason that participants gave for adhering to informal norms around collaborative tool usage is a more generalized sense of "etiquette." Such informal norms around etiquette often appear to spontaneously or organically develop based on a shared understanding of how a tool should be used. As with tool selections based on familiarity and ease of use, however, creating a shared approach to informal norms could also impact the inclusion of members from diverse backgrounds—particularly if members have a different understanding of "courtesy" or "etiquette" in relation to their collaborative tool usage. While some participants were unable to clearly articulate behaviors and rationales associated with their organizations' selection of use and tools, most participants were able to give at least one specific example. Very few of these examples, however, directly addressed topics related to diversity.

I therefore next discussed participants' perceptions on the relationship of diversity to collaborative tool selection and use. I addressed the different responses that participants expressed when asked about directly relating their organizations' use of collaborative tools to aspects of diversity within their organizations within three different thematic categories: No Connection ("That I'm Aware Of"); Well, Maybe…In Certain Circumstances; and Definitely. And Here's Where. In total, 4 participants (from different organization sizes) either did not feel that there was a relationship between diversity and the use of collaborative tools within their work organization or group or did not feel able

to offer an assessment. Several other participants were hesitant to affirm a strong relationship but did offer some potential connections, with many of these participants engaging in a sort of think-aloud process, either with themselves or with me. Finally, the last group of participants (6 in total) responded almost immediately with positive affirmations of a relationship between diversity and collaborative tool selection and usage. A few participants additionally discussed how organization members with different backgrounds could potentially have an impact on the selection of specific tools.

In the final section of this chapter, I discussed how participants directly addressed issues related to differences in tool use within their organization and how their current tools may not meet different groups' needs equally. In addition to giving specific examples of such cases, participants occasionally reflected these divisions in the way that they talked about tool usage among other groups (e.g., "that's just how programmers are"). These divisions can lead to certain sub-groups adopting separate tools, as well as to different groups using the same tool differently. In total, 3 different participants discussed how aspects of tool use could divide members within the same (or similar) job roles, including how individual preferences for and/or experiences could be used as a stand-in for evaluating the quality or the fit of an organization member and the impact that using different communication tools could have on dividing members from different cultures or language backgrounds within a team. Other participants, however, described how cultural differences between different job roles within an organization could shape different norms and experiences with collaborative tools—especially between artists and programmers. While different preferences between these roles are not limited only to more "technical" or role-specific tools, several participants did discuss tools that may be more oriented towards programmers—especially tools that use "versioning" systems.

Finally, while several participants described such divisions related to collaborative tool usage, hardly any participants explicitly articulated how these divisions might relate to established social hierarchies or could *specifically* impact marginalized groups in more than a generalized way. While several participants discussed potential relationships between diversity and collaborative tools in terms of considering members with physical disabilities or impairments, none of these examples are related from personal experience and most are hypothetical situations that were spontaneously developed during the interview.

In order to fully consider the relationship that such divisions in tool usage may have to the equal inclusion of diverse individuals, therefore, organizations will need to more deeply consider the practical outcomes—such as formal recognition of work accomplished, isolation or invisibility of certain work, or even promotion or firing—of the divisions discussed in this chapter. Accordingly, I bring such discussions around diversity (including from both this chapter and the previous chapter) together in the following chapter, in order to address how video game design organizations can better promote the inclusion of members from underrepresented and marginalized groups.

Chapter 6: Promoting Inclusion of Traditionally Underrepresented and Marginalized Groups

While building on and extending the findings in Chapters 4 and 5, this chapter discusses my findings related to RQ3 and focuses more closely on the experiences of participants from underrepresented and marginalized groups. I first discuss how participants described "diversity," particularly in terms of the demographics and identities of themselves and other members of their organizations. I then discuss why participants overwhelmingly feel that supporting diversity within video game design organizations is important, as well as two significant themes that participants discussed in terms of including more diverse members within their organization.

Lastly, I discuss several examples that can be used to inform suggestions for better supporting inclusion, as well as amplifying direct recommendations from my participants. The remaining sections of the chapter (6.2 through 6.4) accordingly discuss such recommendations as organized into themes and sub-themes that I identified during my analysis. These themes cover issues of inclusion that can arise both before and after members from underrepresented and marginalized groups enter a video game design organization.

6.1: Underrepresented and Marginalized Groups in Video Game Design Organizations

While promoting the inclusion of underrepresented and marginalized groups is an explicit goal of this research, I did not emphasize the use of the term "underrepresented and marginalized groups" during my interviews with participants. As I described in Chapters 2 and 3, I deliberately left some flexibility for participants to interpret and discuss "diversity" on their own terms. I asked participants several questions that were directly related to diversity, including, "To what extent have you worked with individuals

from diverse backgrounds, identities, perspectives, and experiences within the field of game design?" (Q15) and used a similar wording to ask about organizational support for "members from diverse backgrounds, identities, perspectives, and experiences?" (Q17).[51] Other questions asked for examples of where "diversity was well supported within your current or most recent game design organization" (Q18) and where "diversity could have been better supported within your current or most recent game design organization" (Q19). I also asked participants, at length, to "provide an example from your own game design work experience of an instance in which you felt issues related to diversity or moments of difference became significant or particularly noticeable during that work" (Q16). Finally, I asked each participant to elaborate both on what they would like to see "game design organizations do differently in terms of supporting diversity within the workforce" (Q20) and on what "individual organization members [could] do to better support diversity within their everyday collaborative work" (Q21). In response to these (and sometimes also to non-diversity-specific) questions, participants mentioned a variety of forms of diversity, both in terms of game content and in reference to themselves and their colleagues. The majority of these forms of diversity, however, revolve specifically around demographic and identity groups that are considered to be underrepresented within the field of video game design.

Accordingly, the rest of this chapter focuses on this particular understanding of diversity. In this section, I discuss how participants articulate "underrepresented and marginalized groups" within their organizations, as well as two significant themes that address why participants unanimously feel that it is important to support the inclusion of such groups within video game design organizations. I then discuss two additional,

[51] Please see Appendix B for the full interview instrument.

overarching themes that participants discussed in terms of including more diverse members within their organization: the importance of having diverse people in diverse positions within the organization, and the challenge of facing conundrums associated with hiring more members from diverse backgrounds.

6.1.1: How Do Participants Articulate "Underrepresented and Marginalized Groups" Within Their Own Experience?

In this section, I briefly discuss some of the significant identity groups brought up by participants (in reference to themselves or others) during discussions around diversity.

Of all demographic groups mentioned, participants most frequently refenced differences in gender identity within their organization and/or the industry. Participants additionally discussed the race or ethnicity of themselves or colleagues, especially in terms of U.S. nationals (as opposed to individuals of diverse ethnicities who were not U.S. nationals). A few participants also discussed language group or ethnic differences in terms of game players or colleagues in other countries. Additionally, a couple of participants referenced how differences in religion might surface within the workplace. Finally, several participants discussed differences in physical or cognitive ability—particularly in relation to thinking about how tool use might be related to diversity (as I discussed in Chapter 5).

The composition of these discussed groups is also undoubtedly related to the demographics of my participant sample (which I discussed in Chapter 3). For example, 7 participants self-identified as female (thus representing the single largest underrepresented group within this study) and most of them directly discussed their experiences in relation to that identity. Similarly, several participants discussed the

experiences of others from the same or similar identity groups as being particularly salient to their own experiences.

In addition to discussing a range of demographic and identity groups, participants also discussed how such underrepresented and marginalized groups are affected by support from video game design organizations—both as organization members and as game players.

6.1.2: Why Supporting Members from Diverse Backgrounds is Important for Video Game Design Organizations

All participants asserted that it was at least "important" for video game design organizations to support "members from diverse backgrounds, identities, perspectives, and experiences," with roughly half of participants using intense modifiers such as "extremely," "insanely," or "incredibly" important. In elaborating on why they felt that this support was so important, participants almost exclusively discussed one (or both) of two themes: a need for equality in society and/or the workforce, and a need for better and more diverse games. Accordingly, I discuss each of these themes in more detail within this sub-section.

6.1.2.1: Equality in Society and/or the Workforce

In total, 5 participants discussed the importance of supporting diverse members within video game design organizations in terms of equal inclusion within the industry and/or in society more generally. One participant emphasized the power that game creators have in both reflecting and shaping society, saying:

> It's seemingly a small thing, but then the teams that we create—it's not just like, "Oh, then the art will be—or—." Like, clearly the things we make reflect the values that teams have. And it's like that, in and of itself, is important. But I think there's— I don't know how to put it into words right now, but the effects that that

> has is important. And the position of getting to make video games is itself a power. And who has that power has meaning. Yeah. [And] it's important to disrupt that structure.

Another participant specifically discussed the financial impacts of such power and equal inclusion, saying:

> I think it's extremely important. Partially because a lot of minorities need the additional support. A lot of times, we are more economically disadvantaged. And so, yeah, that part really helps.

Both of these examples indirectly appeal to a concept of social justice that extends beyond the specific field of video game design.

Other participants focused on more concrete effects that explicit organizational support can have within the workplace, especially for members from underrepresented and marginalized groups. For example, one participant discussed the (unpleasant) surprise he felt in learning just how poorly some members could be treated within the game design industry, saying:

> Oh, [support is] very important [laughs]. I guess I feel that way mostly because— I guess growing up with video games my entire life, it's something I never realized until it was mentioned to me more often as I met more people outside of the background that I came from. I was like, "Wow, actually, we still kind of treat people a little shittily," and it's— I think some people don't even realize it. Or if they do start to realize it, they decide to internalize it personally instead of just realizing like, "Hey, I could actually just be a little better." And it's a weird defense mechanism I've seen happen sometimes.

In contrast to this response, another participant discussed struggling with the unpleasant effects of a lack of support for underrepresented groups within the industry, saying:

> I think it's incredibly important. And this is just something that I've talked to many people about. Maybe it's hard to articulate, but I think if there's no support, [then] it's not even neutral—it's actually an active negative. So, if a woman feels unsupported in game dev[elopment] and she doesn't feel like she's doing as well at game dev, it's not just that [she feels] she's at a mediocre level. She feels that she's actively worse. And so similarly, there's a pressure to be *better*, right? So, if you're a female programmer—or at least, I personally feel that I have to be better

> than men to be even considered on the same level. I don't think that's an intentional thing that people are doing, but I feel like it's this pressure that's there. And it's true for minorities, like my friend of African descent. He encountered a lot of pushback [to the point] where he's like, "Well, maybe I don't know as much as them because I didn't grow up programming." But then it's like, "Well, no, you *do* because you've taught yourself a lot and you're incredibly intelligent." […] [And] maybe [if] you don't feel that you belong already, it hurts a lot more [when you get that kind of pushback]. […] And I'm sure that's true in art and design as well. But of course, programming is my main area. So, I think when you're trying to do diversity, it's not just, "let's hire some people and call it a day." You have to make sure that you're aware of maybe some other things going on that might become unwelcoming and sort of drive those people away. (Sarah Abraham)

This example particularly illustrates the need for organizations (and the individual members within it) to visibly and actively support members from marginalized groups. (The need for visible and active support is a significant theme for supporting the inclusion of underrepresented groups that I discuss in more detail below in section 6.3.)

In addition to emphasizing the importance of industry workers in general for supporting diverse individuals, participants also discussed the impact that support for diverse members could have on game players—especially in terms of creating better and more diverse games.

6.1.2.2: Better and More Diverse Games

Altogether, 14 participants discussed the positive impact that support for diverse members could have on the development of better and/or more diverse video games at length, although many participants touched on both themes in their discussion. (And all participants at least briefly referred to a link between diverse team members and creating more diverse games at some point during their interview.) For example, one participant discussed the limitations to creativity that homogenous groups can have on game design, saying:

> I think it's pretty important. I think it's interesting because people often design and make what they know. And when it's people of a homogenous sort of background, they make and design and write the things that they all know. And you don't get a wide breadth of experiences when you're playing these games because they all kind of come from the same sort of people. And I think that when you have this wider diversity of people, you see a wider diversity of even just what a game can *be*—of the gameplay, of characters, of the stories they tell. And I think you've definitely seen that in recent years, where—I don't know, at least from my perspective—where I believe more minorities are going into games. And you're not seeing as much of, like, white male protagonists, [and] like, gun-toting space marine kind of thing. There's a greater bevy of what a game is, and the characters and experiences shown there. (Ricky Llamas)

Building on this theme, another participant expressed concern that such "homogenous" groups only represent a small fraction of the total diversity of both game players and potential game makers:

> I think it's insanely important [to support diverse members] particularly because I think games should be for everyone. And a lot of people seem to have got it into their heads that the people who make the games are the same as the people who play the games. And that *should* be true, but at the moment, that's not true, right? A lot of people who work in the games industry are of a particular background that doesn't necessarily resonate with the majority of the world's population. Like, most of us are not Americans, right? But we've got a lot of American games that centralize on American experience or American perspectives. So, I think it's really important to have people of various backgrounds so that you can view your game in a different perspective and understand how people will interpret the experience you're about to give them. And if you don't have that, you're not going to be able to make your game resonate with a large number of people. […] For example, let's say you want to make a UI for a puzzle game, but how you lay out this UI might not necessarily be the same if you're marketing to an Asian audience. […] And these are all things you might not necessarily think about when everyone on your team is American and only knows English and not any other languages. So, you'll find yourself in a lot of situations where you need those perspectives anyway, and you won't necessarily realize you need those perspectives until it's too late. (Ava Pek)

As these examples illustrate, having more diversity within video games also supports equality within society more generally—just in slightly different ways than direct equality within the workforce.

One participant directly addressed such a need to go beyond just considering diversity in the workforce as having a significant impact on society, saying:

> Yeah. It is a *huge* question because it is so far beyond just having panels about diversity in the workforce. In fact, I'm kind of sick to death of panels of diversity in the workforce. I think rather than thinking about who you should hire, it should be more about practices in the workforce, as well as the content you're creating. Because everyone is way more concerned about what the game is going to be, ultimately. And as games are right now, everything is, for the most part, very, "We want a white male between the ages of 15 to 35 to be our target audience." And people don't believe you when you say that there is a market for people other than that bracket. That is one of our goals in making this game, we're making a game that really is for everyone. […] And yes, that's a good thing. Yes, it can make money. […] A problem in the industry is when people look to veterans, and veterans look at games that are different—not always, but a lot of the time—they'll say, "There's no market for that. I don't get it," and, "Why support something like this? It's not going to make you any money." […] Someone asked, "Where are the heroes and villains?" And life isn't like that. Why should *all* of our media be like that? (Robyn Haley)

Similarly, another participant discussed feeling dissatisfied with such a limited range of diversity within games not only on a societal level, but also on an artistic level, saying:

> I think it's incredibly important. I believe that inclusion allows people to enjoy a story on a level that's more personal, rather than having to kind of pretend that "Gruff McManStrong and his giant machine gun are there to save the day, and you're also them, even though you're not." Because it's to me it's at equal points important for other people to be able to enjoy as many stories as possible, but also it speaks to the creative side of things and how intensely *boring* it is to play the same game a million times. […] I think that oftentimes a lot of the backlash that comes from that, when people say, "Well, this is my art, and this is what I want to create." I say, "That's okay. You're an artist. You can create whatever you want. But as an artist who's creative, wouldn't you want to try and push the envelope and find some new territories and explore some new concepts, instead of it just being all, like, form-fitting boob armor and glossy dudes with giant swords?" It's like, "Let's explore this. There's more people in the world than those folks, let's try something new."

Additionally, for both of these participants, support for inclusion involves dealing with the preconceptions (or limitations) that others in the industry may have about the content of video games.

Successfully creating a more diverse game therefore involves interacting with and integrating members with different opinions. One participant particularly stressed the importance of the evaluating the diversity of the game produced in order to truly assess the support for diversity with the design team, saying:

> [You and I] didn't talk a whole lot about the final product, which is interesting. We talked a lot about like, "Okay, you've got a team and they're collaborating well and you're listening to people and their work impacts what you're doing and hiring diversity," all that kind of stuff. We didn't talk about, okay, well, then what game did you make? […] I would hope that by making products that visually demonstrate that they're diverse, that's *even better* than a statement on a hiring sheet that says you welcome diversity, right? And at the same time, no matter how diverse your team is, if you go around making Black Ops with white characters all the time, that's not going to showcase— It's sort of a metric that diversity is working if you can see how it shows up in your final products that your customers actually see. […] [And] part of the goal is to reach more people. Or different people. Or underserved populations. (Randolph Smith)

This example highlights the importance of not only the complicated relationship between diverse games and the diversity of a game design team, but also of the relationship of those games to reaching more diverse players.

One participant similarly emphasized the importance of considering the effect of diverse games on game players, adding:

> So, you know, I think it's funny because when you talk about the lack of diversity within the games industry, I think it's also a conversation about the lack of diversity among the people that are playing your games. Because I think— What often happens is someone plays your game, or a similar game, and that gets them interested in games. And that gets them interested in one day *making* games. And when you're making games that are largely about the same kind of demographic, that are about the same kind of general topic matter, you're going to be attracting only the people that are interested in that or see themselves reflected in that. And I think as we expand out to things like having more minorities and more women be

> the protagonists of the game, [and] as we expand out the definition of what a game *is*, I think we're drawing from a larger and larger pool of people that are going to one day say, "Yeah, you know, I want to make that." (Ricky Llamas)

Another participant elucidated the nature of this three-part relationship among game designers, video games, and game players and how it interacts with supporting greater diversity and inclusion, saying:

> It all builds together, and it's exponential. […] The more of those kinds of characters that you do, the more diversity that you have, the more that you see that that's reaching an audience that you didn't have before— […] And I think there will be more who follow behind them, and as you create more diverse games, you create more diverse people who are interested in games.

This example additionally highlights how supporting inclusion within video game organizations today is crucial for better inclusion in the future.

Participants therefore feel that supporting more diverse teams can (but doesn't necessarily always) make more diverse (and usually better) games, which then can appeal to more diverse audiences (especially form underrepresented groups), thereby potentially encouraging more individuals from underrepresented and marginalized groups to enter the video game design field. But where are these diverse people now? How do they fit into existing teams and organizations? And what impact does their presence (or absence) have on supporting diversity within the games that those organizations produce?

6.1.3: Diverse People in Diverse Positions

One prominent and overarching theme that participants discussed across all significant structural features in relation to inclusion is the importance of having diverse individuals in diverse positions within their own organizations—and video game design organizations more generally. Participants discussed this diversity of positions in terms both of different job roles within the organization and of differing levels of hierarchical position or responsibility.

This section accordingly discusses the significance of having diverse members in different roles and positions, as well as the impact that this has on supporting (or not supporting) diverse content in games within participants' organizations.

6.1.3.1: Diverse Roles

As I touched on several times during my discussion of salient structural features in Chapter 4, participants across all organization sizes discussed how some aspects of diversity interact with each structural feature (size, task division and allocation, coordination, decision making, and recruitment and hiring). Participants additionally discussed the importance that any single member may have during the design process. At one time or another, therefore, every single role within an organization will become necessary for completing the project. Accordingly, each role provides an opportunity to introduce diversity within the organization—in terms of personnel, game content, or both.

Participants additionally discussed the presence of members from underrepresented and marginalized groups within various job roles as being a particularly noteworthy feature of their organization. For example, one participant broke down the demographics of his small organization in terms of different job roles:

> I'd say that the company I'm at right now is probably a pretty good—or at least a better example of diversity in genders, sexualities, and races. So, my art lead who just left was an African American female and we've got several Korean Americans and other Asian Americans on the team. We did have a couple of LGBTQ folks who were working on our QA team, but unfortunately, when we had to downsize, a lot of the QA team got chopped. And then as far as other folks—I mean, yeah, it's still, by and large, a bunch of straight white males at the top of everything. In fact, except for one of the top reps, it's all straight white dudes.

Another participant at a large organization explicitly described the impact of adding members from underrepresented groups to particular job roles, saying:

> [A lack of diverse team members made a difference] when it did come to things like creating characters and creating stories for those characters. Like I said, it was largely written by straight white men. And don't get me wrong, they worked hard to be as inclusive as they could think to be. But I think something of that still lacked. And since then, we've hired a woman who is our narrative designer. They have me now as an occasional writer on a project, as well. So, I think that they've kind of brought in some more experience from different angles. (Ricky Llamas)

These examples (and others discussed in the previous chapters) particularly emphasize the significance of having diverse members in diverse roles throughout organizations larger than "tiny" and in more bureaucratic organizations.

Participants from tiny organizations—both those that are more networked and those that function more like a single small team—also discussed several significant impacts of having diverse members in different job roles. Although building diversity within a tiny organization through including members from different backgrounds (including from underrepresented and marginalized groups) may seem especially relevant for adding "core" members, even extended, networked members can have an important impact on the diversity of a tiny organization. One participant described the decision to bring in an additional member to consult on issues related to diversity, saying:

> What we want to do is—[My co-member], as cool as he is, he hasn't lived every life out there. And particularly with people of color, he doesn't have a lot of the context that's required to really do that right, but we're both aware of that. So, one of the things we're doing is we're bringing on someone who has a little bit more insight and so that that way, we can really get those characters right, because it's important. And so, we're kind of having [that person] and [my co-member] talk back and forth, and that's going to be starting soon so that they can both make sure they get everything right. (Mitchell Garrett)

In this case, an additional member could bring both demographic diversity and a specialized, diversity-focused skillset to this organization. This member would fully agree to taking on this role and would be compensated explicitly for their specific

skillset. (I discuss the potential ramifications of using such consultants in more detail below, in section 6.4.2.)

Equity between members from marginalized and non-marginalized groups is also related, however, to equity in responsibility or hierarchical position with the organization.

6.1.3.2: Diverse Hierarchical Position or Responsibility

In total, 8 participants discussed the significance of having diverse members—especially members from underrepresented or marginalized groups—at varying levels of hierarchical position or responsibility within their organization. Most of these participants were either currently in an organization larger than "tiny," or referred to a previous organization of similar size. One participant from a large organization expressed appreciation for the extent to which his organization has successfully integrated female members into diverse levels of responsibility, especially compared to previous organizations, saying:

> If you look at the leadership of various groups, there are— Especially compared to the industry average, we have a significant number of women. And the head of the programming group for my main project is a woman. A lot of the production staff are all women. We've got women who are running the operations group, and it's not just traditional, "Oh, they work customer service," or whatever. There's more than that. We have technically-oriented women or project manager-level women. And that is a definite change from other places that I've been. I've been at startups where it was 20 bros, all making a game, [saying,] "We're all going to get rich," and we didn't get rich. (Sam Johnson)

Notably, this diversity within different levels of the organization is additionally spread across different job roles.

In contrast to this positive example, most of the other participants expressed some degree of concern or skepticism about the degree to which their organization has integrated diverse members into different hierarchical levels within the organization—

especially within the highest levels. One participant summed up this sentiment by saying, "And ideally, your management team ought to be diverse" (Randolph Smith). Another participant from a large organization discussed the effect that having only "senior" members (with extensive experience in the industry) at the highest levels could have on the demographic diversity of leadership within the organization, saying:

> I think [my organization] is kind of an old—I wouldn't call them an old boys' club, but like an old folks' club—where the people that are there and that are senior are the people that have been in games for a while. And I'm talking, like, 30, 40 years—and that's like a lifetime ago in the realm of video games. So that kind of is a reflection, I guess, of the lack of diversity I would say that existed in the industry at that time. So yeah, maybe the people that are highest up and most senior—with, I think, a few exceptions—are white, male, and all that. (Ricky Llamas)

Another participant from a large organization described a similar distribution in the top management positions, but expressed slightly more concern about the situation, saying:

> I've noticed most of the diversity is on the lower ranks of a lot of ladders. There's only one manager that I know of that's bisexual. When it comes to color, I think we have three people of color in management positions.

Finally, one participant from a small organization echoed these sentiments in slightly stronger (and more succinct) terms, saying "Well, it's a lot of white dudes on top." None of these participants, however, particularly discussed feeling like they personally had been affected by this lack of diversity within the highest levels of the organization.

A few participants additionally discussed potential reasons for the lack of diversity within the higher levels of their organizations. One participant discussed the potential effects of both a lack of cultural support for members from underrepresented groups and a lack of visible diversity within the upper levels of an organization, saying:

> Well, they probably didn't feel welcome. They probably felt the culture didn't actually want them there. Even though you can have a bunch of initiatives, it's more powerful to actually have that diversity built in and welcoming at different

> levels of management, too. So, if you maybe hire a bunch of diverse entry-level programmers but there's no diversity in management; you can read the writing on the wall. Are you going to get promoted? Probably not. So, it's a lot more complicated than just saying, "Let's hire some people." (Sarah Abraham)

Another participant discussed these same issues in terms of her own personal frustrations with trying to move up into a high position within her large organization, saying:

> I guess it's improved a little bit, but I don't know— We don't have a lot of like, leads, that aren't white men, [and] most of our upper management is [white men]. So, it's kind of upsetting, because I really have gone to my executive producer and said multiple times that I want to be a lead and that I want to be in that position, and then it's kind of like, "Well, right now we have all of those positions filled." So, definitely I've been struggling with the fact that I feel like this other guy—because someone is kind of standing in his corner—that if my lead would leave, that [this guy] would be shoved in there, even though [I have] people telling me that he's not the caliber that I am. It's still— That's the point where I would probably part ways with this organization. (Katie Roberts)

Both of these examples additionally illustrate how the ability to advance one's career is an important consideration for individuals from underrepresented groups who may be considering either joining or leaving an organization. (I discuss such considerations in more detail in section 6.1.4, below.)

Participants also discussed how a lack of diverse representation in lead positions and decision-making roles specifically affects diverse content and representation in games, as well as affecting diversity in work teams.

6.1.3.3: Effect on Diverse Content in Games

In total, 10 participants discussed how having (or not having) members from diverse backgrounds and/or identities had directly affected diversity within a game that their organization was developing. Several participants discussed instances where they had felt some concern that they (or their team) might not be fully equipped to depict

certain identities or others' experiences. For example, one participant discussed a memorable example from a previous organization, saying:

> I can't remember the exact time period and location that the game was based on, but it was based on a previous time period and it had [a] portrayal of people of different ethnic backgrounds that were not culturally acceptable today but would have been back then. And I remember being a little uncomfortable with the things that were happening in the game, like the way that you're supposed to treat other characters a certain way and it's like, that's what the game wants you to do because that is what you would have had to do back then. But we didn't have anyone on the team from those backgrounds. And so, it was super weird to me that we were making decisions about how appropriate that was when we didn't have someone who would be offended by it. […] Maybe there were focus groups and maybe someone higher up was actually making those decisions, but still, in the moment-to-moment [work] of assembling it and putting it together we had to make decisions about how those interactions would work, and we didn't have that point of reference, and no one on the team did. […] Yeah. And I think that is a problem. (MJ Johns)

Similarly, another participant described feeling personally uncomfortable with making the day-to-day design decisions involved in implementing a game with some questionably exoticized aesthetics:

> I think it affected the art team because we were the ones who were pointing those things out. We were a small team, but I think that I was surprised at the time at how completely oblivious that other members of the team could be to the questions that we were trying to raise. Again, if you're of a particular gender and ethnicity, it's really easy to say, ''I don't see it. I don't know what you're talking about—it's no big deal.'' […] I think it has to do with the nature of the decision-making that we were involved in. Because it was an "Asian-themed" game and we were building the "Asian-themed" aesthetics. […] And then, when you have the conversation of like, ''Well. That's a samurai. Which is different from your Chinese warrior. And [so] we may want to write a storyline that maybe explains why they're in the same universe." […] Yeah. And so, I think it's just that a lot of it had to do with the *types* of decisions that we were making from day to day, and the types of conversations. Whereas like a programmer would be like, "[The] code works. You push the button, the thing happens." And the design decisions were being made by the very person who was making these sort of weird assumptions about what is or is not okay. (Thomas Jung)

In both of these cases, participants did not feel that they had either the authority or the agency to affect meaningful changes to these games. (Notably, both of these participants self-identify as being part of at least one underrepresented group.)

Another participant, however, described a case where he *did* feel that he was in a position to affect change in a similar situation, saying:

> Yeah. We had a game idea where the main character is African American and it had a fair amount of story, and I was like, "So I literally *cannot* write this game." I was the creative and I was like, "We have to hire a Black writer." And they were like, "What? But that's going to take an extra step." And I'm like, "That's how it is. We can do this work and we can design it and stuff, but we need at least one African American prominent voice who's directing this creativity. Otherwise it's inauthentic. And it's not fair to that community." […] We didn't even get that far along, but I think they sort of balked, because you have a company and you want to do stuff like this, and it's literally going to cost more money. And your company could die. Your company could die because you made bad financial decisions, so there is very practical [considerations]. […] [And] you have to take those considerations seriously, whether your reasons are altruistic and inclusive or not. […] So, I can kind of—I can sympathize where they're coming from, but fortunately, that one didn't get pushed all the way to the end like that. (Randolph Smith)

This example additionally highlights the impact that even a single key decision-maker (usually in a position of some authority within the organization) can have on diversity within the design of a game.

A few participants discussed in detail the impact that key members of an organization—especially members at the highest levels of the organization—can have in shaping diverse content within a game. One participant from a large organization discussed the negative impact that one specific member with significant authority had had in the past on diversifying several aspects of a game project, saying:

> Way back when [development started on this game], [some of this content] would NOT have been in the game because the guy that worked on it was not a fan of pink for boys and all this, you know, "weird stuff" like that. [And] when we first started [working on the game], there was an extreme lack of female [Non-

> Playable Characters], because again, the creative director didn't really like— [He said] he didn't really like the way they were made. One of the things [that was] said in one of the meetings, which I thought was just, like, abhorrent was, "We don't want to make this too gay." It's like... rainbows? Like... guys, girls, love this stuff and they don't care, obviously, [because] our sales now for this [are so good that] they say that it has nothing to do with gender, or anything. It's very strange. […] I always want to be kind of inclusive because I know— It's so weird to make decisions based on what [you think there should be]. Like, that's the problem with the creative director, is that he was concerned with what's in his own mind, and he wasn't listening to anyone else. He just wanted this one thing. So, I feel like you have to think about how stuff is gonna go. And I'm just— I'm proud of this [rainbow-related thing that I worked on], and that it's gone over so well, because it just proves that. (Katie Roberts)

While discussing later in the interview some of the positive actions that her organization had taken to support diversity, she added:

> Well, I think that one of the more important things is that we are— The creative director that thought negatively about all this stuff left. And from that, I think there was more of a chance for people to speak out and be like, "Let's look at this, let's identify what's going wrong here, because obviously we're getting all this negative feedback. So, let's kind of look at that and see what we can do with that." (Katie Roberts)

In this case, a specific individual was clearly able to affect the overall cultural norms around supporting certain types of inclusive content—as well as clearly having a strong effect on the comfort levels of other organization members who might be in favor of such content (or themselves from underrepresented groups).

Another participant from a large organization described a similar example where his interest in including more diverse content within a game was ultimately not supported by upper management. He explained at length how an important decision related to diversity within the game unfolded, saying:

> We had a list of characters that we wanted to use in this story. And we only got four characters. […] That's what we have the budget for. So, we had two men—both white dudes—one Black woman, and one white woman, and felt good about having a pretty even split, and still having pretty iconic characters. Ultimately, a few revisions and drafts in, we were told to remove one of the women. Now, it's

> true that there's another woman who joins later. So, by the end of the storyline, you do have more female representation. But essentially [we were told], "Cut the woman and add two male characters in her place that weren't in the game before." So now, where we were supposed to have four characters, we have five. But of those five, it is [now] four men and one woman, right? And I understand the decision. It's about who are the most recognizable characters. It's about not repeating [because] some of them had kind of similar abilities. [And] everybody has some idea of the property, and those [familiar] characters tend to be male. So, by the end of [the game], you'll have six characters, four men and two women. And I would like to do better than that. […] But again, I understand, and I think we can add more characters as we go.

When I asked him later about how this decision had affected his work, he responded:

> It makes me feel less empowered. My arguments were heard, weighed, and ultimately only partially listened to. [laughs] And I don't think it'll affect my writing of the actual content when it comes down to it, because I love all the characters. But it'll always make me feel like I can't defend [this decision]. If fans play the game and say, "Oh, I can't believe it's this ratio," it's not good—and probably, I'm not going to be the spokesperson, so it doesn't matter—but in my mind, I would feel like I would have to say, "Yes, I agree, but I had to do what I was told." But going forward, I think it'll affect how I develop other stories, because I think I'm going to push harder for more inclusivity, and I think I'm always going to get the same pushback. "Who's more popular?" And I've said already, if we always have that attitude, then we're just going to end up with this white-male-heavy game, because that's the property that we're working with. […] As long as I am on this project, I will *always* be pushing for more inclusive characters.

Finally, when I asked him what, if anything, he thought that his organization could do better to support diversity, he added:

> They could have said, "We agree that it is more important to have diverse characters than the very best-known characters. We can bring some of those best-known characters in *later* and make sure that, when we launch, our game has a more diverse cast," instead of the other way around. […] I think that if we had more diversity in our leadership, that there'd be a greater chance, in the specific example that I gave, that somebody would've said, "No. We're going to use these characters." If we had a creative director who was a woman ,and she had the power to say it, she could say, "I hear your argument. I want to use— I want at least a three-to-two split. That's just the way it's going to be." But because we don't—even if the men aren't doing it out of a sexist place, they are making a

> choice—[…] Yes. They're not prioritizing gender diversity the way they might if they were the ones who were underrepresented.

This example illustrates the impact that a *lack* of sympathetic and/or engaged decision-makers can have on support for diverse content within the game project. Additionally, this participant is again emphasizing the importance of having diverse members at diverse levels within the organization, as this inclusion brings different values and perspectives into the top tiers of a hierarchical organization.

In order to get diverse members into diverse positions throughout an organization, however, organizations must first *have* diverse members. Once again, key decision-makers directly impact the processes of recruitment and hiring within participants' organizations—especially the hiring of members from underrepresented and marginalized groups. Unfortunately, many participants in these positions discussed finding themselves within what I have named "the hiring conundrum."

6.1.4: The Hiring Conundrum

A second prominent theme that synthesizes participants' discussions of diversity and inclusion in relation to organization structure is a fundamental conundrum related to hiring diverse members. Nearly all participants discussed the hiring process as an important vector for shaping the diversity of an organization—particularly in terms of increasing inclusion of members from underrepresented and marginalized groups. Yet many of these same individuals discussed feeling that there were challenging aspects to accomplishing this goal that they were unable to either fully understand and/or overcome.

This section discusses key aspects of the theme that I have named "the hiring conundrum," including participants' expressed difficulty and both recruiting and successfully hiring members from underrepresented groups and the effects of firing and quitting.

6.1.4.1: Where Are They and How Do We Get Them In?

While most participants expressed a desire to broaden the diversity of individuals working within their organization, most also expressed a lack of the sense of agency to actually do so (whether externally or internally imposed). One participant summed up the challenge of not only increasing diversity on teams but also of normalizing diverse teams within the industry, saying:

> So, obviously, hiring. When you're making hiring decisions that's a pretty key moment. [laughs] […] [And showing,] "This is what a video game team looks like, this is what we're trying to change." And people, they just get used to it and they don't balk. [But] how do you get them in? I mean, hiring statements? Like, nobody—nobody knows. (Randolph Smith)

Participants discussed the conundrum around this "moment" in terms of two main challenges.

The first challenge that participants discussed is feeling that there is a lack of candidates from underrepresented and marginalized backgrounds for their organization to hire from. One participant from a large organization discussed the challenge of having a small percentage of applicants from underrepresented backgrounds within an already small number of applicants, saying:

> I feel like there are a lot of other factors [in limiting the applicant pool] that have nothing to do with diversity. So, there's already limits. So, if there's an overall limit, then you're limiting everything, which means you're probably also limiting the number of diverse candidates. Right? If you're getting 10% of the population of people in video games applying, and of that 10%, only one percent is diverse, [then] you're getting fewer diverse candidates.

Another participant described wishing that her organization would hire more diverse members, particularly in a job role that was not her own, saying:

> I think that they're trying to move toward, or sort of toward, hiring more diverse people—I definitely wish that they'd hire more female programmers. But those are—apparently—hard to find. (Katie Roberts)

Similarly, one participant from a large organization discussed the challenge of trying to hire a certain demographic that "just isn't there" within the applicant pool:

> This is tricky to navigate but— I don't know all the specifics of the laws. I can't hire someone because they're female. But given roughly the same talent or skill set and personality, I would have leaned towards a female because I think we need that more. We need that perspective, especially for making casual games. […] Because, again, I'm not an expert, but I think it's illegal to be like, "You're not a woman. We're looking for a woman." I don't think you can put that in a job application. Nor should you, of course. It's just that sometimes I certainly wish that it was a more even distribution, because if there's other people out there like me—we want to hire more women, they're just not there for whatever reason. So, I think that's a positive thing. That there's, hopefully, other people—plenty of other people like me—in hiring positions like that.

In addition to the difficulty of finding such diverse applicants, this example also highlights a tension between wanting to increase diversity within an organization and wanting to do so in an equitable (and legal) manner.

The second challenge that participants discussed is getting diverse applicants (especially from underrepresented groups) to actually choose to work with their particular organization. For example, one participant expressed difficulty in getting female applicants to accept the final job offer to come work at his large organization, saying:

> The biggest thing is I would— As I hinted earlier, I would love it if we could get a woman onto the writing staff. […] I think that's the biggest potential blind spot in our outlook. […] From the moment I was hiring writers, I've been desperate to get a woman on our writing team.[…] But we just haven't been able to land one. They tend to end up going other places, which is really annoying. […]We've gotten within inches of signing two or three, and it just always falls through." (Sam Johnson)

In response to similar comments from another participant, I asked, "You've mentioned that you wish you could get more applicants—do you think that the problem starts during the hiring process or before the process?" He then replied,

> I imagine if I was— I'll try to turn the tables on myself, and I'm looking for a job. And I'm going in, and I go to a place that has 80% women. And I'm being

> interviewed by a panel of women. Maybe I'd feel that, "Man, they like to hire women." [laughs] Sure. Yeah. That's tough. I don't know how you get out of that.

Both of these examples illustrate that even members with some degree of authority and agency in the hiring process often struggle to completely think through or address the reasons for being unable to successfully hire more diverse individuals into their organization.

While many of the issues I have described thus far are perhaps more common in larger organizations, tiny organizations are not immune to the challenge of finding and recruiting members from underrepresented groups. For example, one participant from a tiny organization discussed her difficulty in finding potential new members from specific demographics that are relevant to the game project, saying:

> So, I guess that would be where I would really like to hire more people who are directly related to sort of the area that I'm representing. And certainly, I have some artists that I'm constantly trying to reach out to. But again, artists are always busy. Because they're always hustling for work. And again, I'm some random indie developer. So, even though I'm like, "I will pay you." They're like, "Do I want to deal with the hassle of this?" Also, if they live in a foreign country, you have all this money going internationally, which is a big challenge. So, there's a lot of challenges to that. […] It's very hard because everyone's busy and working on other projects, and they're not personally invested in my project. So, a lot of the people I work with are just people I know from the games industry. So, there's lot of men, there's a lot of straight, cis-identifying men—which is fine. [laughs] But I do think, ideally, I would like more viewpoints. (Sarah Abraham)

Another participant from a tiny organization discussed the challenge in expanding (and evaluating) the diversity of his network of contacts and contractors, especially for a new organization, saying:

> Yeah, it was important to me. This is the first time that I was more in charge of who I work with, that I wasn't just hired on to a team. So, I didn't want to be— I did not want to create a team of white guys. […] I mean, it's hard to say because it's just—just me. And then it's like I'm looking for other soloists or small teams to work with. And even that filter is limiting, right? It's like, who has the privilege to do that? And I mean, it's easy to say—to pat myself on the back. My hiring practices are— I'm looking at them and trying to have a diverse pool of people

> that I work with, but I don't know how to fairly assess that. I don't want to be overly congratulatory.

While recruiting and hiring diverse applicants is an important first step towards increasing diversity within an organization, simply hiring people is not the end goal—having and keeping those members is.

Accordingly, on the other end of the hiring process is the processes by which members *leave* organizations that they have been hired into.

6.1.4.2: Firing and Quitting

If addressing the recruitment and hiring processes is important to addressing diversity within video game design organizations, then considering the processes by which—and particularly the reasons *for* which—individuals leave organizations is equally crucial. As with recruitment and hiring procedures, participants most often discussed issues of firing and quitting (or voluntarily leaving) in relation to their previous position or to demographic diversity in their organization.

One participant discussed how the challenges of being the "first" member of an underrepresented group can additionally have a cascading effect on retaining members from underrepresented backgrounds, saying:

> They either don't have opportunities, or decided they didn't want to be the unicorn and left. And yeah, there's just a lot of places for people to leave. Like, for example, let's say, you decided to go off and work in an English-speaking place. But they were all the same ethnicity, [and it was] different from yours. You would feel very uncomfortable, right? You wouldn't necessarily want to stay in that situation. You could tolerate it, maybe, but it's not great. So, it can be really tiring. Especially because everyone has sort of the same perspective on things and that can be really wearing down on people in social interactions. (Ava Pek)

In this case, the example is more general or hypothetical. A few participants from underrepresented and marginalized groups, however, directly expressed having had thoughts of quitting due to their experiences within an organization. As I discussed in

section 6.1.3, one participant from a large organization who felt that she had been repeatedly overlooked for positions with more responsibility and authority expressed that she would likely leave her organization if the pattern continued.

A few participants who self-identified as being members of underrepresented groups discussed having actually quit previous organizations. One participant described leaving her previous company due to unequal treatment, saying:

> [We were supposed to have] a job performance review every year. We never really had a formal structure on how often to do those. But often, [in] a company with that kind of meeting, [it leads to] a raise in your pay. And the company recently got acquired, so I got the excuse that "all the process was up [in the air] and we didn't know what to do." I'm like, "Well, I still want a raise," but I never got one. And then later they gave me a 2% raise, which is nothing. And this situation continued where I was like, "Well, what about that performance review, what about this raise?" And I never got one and I eventually quit. I had been at that company for three years. And I only got one 2% raise in my salary. Meanwhile, they were busy hiring people above me who weren't necessarily qualified for the job. They were hiring people next to me who, quite frankly, weren't good at their job and *they* would get raises. And those people would happen to be white. So, it's very difficult to not feel cynical about the presence of white people at tech companies [sometimes]. (Ava Pek)

A few other participants discussed how such unequal treatment led them to not only leave their previous organization but specifically to create their own organization. As one participant discussed her reasons for leaving her previous position and founding a new tiny organization, I asked if the "sexual harassment issues" that she had mentioned previously in the interview had also "contributed to [her] decision to found [her] own company." She replied:

> Oh, absolutely. I mean, I wanted to prove that, maybe, a girl could make it in the game industry. And I had worked for myself for several years beforehand doing contract work and running my own business [and] I wanted to be able to manage things and create an environment that would be open. And unfortunately, it is such a small team that we're not hiring anyone. But eventually, I would love to have a team of diverse people with different backgrounds. (Robyn Haley)

The studio head of a tiny-small organization discussed having very similar reasons and goals, saying:

> So, when I was first setting up my studio, one of the reasons why I started my studio is because I was really frustrated with the culture of the game industry and how—it's very stereotypical to say this—like, very white male dominated, but not just that. It's a really privileged group of people who tend to work in the larger game studios, and they all come from middle- [or] upper-class families and most of them either went to school for game design, or they went to school for programming and then switched to game design. So, there's really very minimal variety in the kinds of people you work with. And in my experience, working at four or five different studios, I was the only—so I'm non-binary but born female—so the only female person at three out of the five studios. And I think I've only ever worked with three or four people of color. And so, it's just been really lacking in diversity. So, one of the things that I just really wanted to focus on when I started my studio was having a diverse team. (MJ Johns)

In both of these cases, these participants additionally emphasized how their previous negative experiences had reinforced a desire to better support the inclusion of underrepresented groups within their current organizations—although only the second participant had been able to significantly implement these goals so far. (I discuss some recommendations made by this participant later in this chapter.)

In addition to (somewhat) voluntary quitting, members from underrepresented and marginalized groups may also leave organizations through layoffs or firing. While none of my participants discussed this situation in relation to their own experiences, a few participants indicated concern that colleagues of theirs from underrepresented groups might have been fired at disproportionate rates. For example, one participant from a large organization questioned some of the reasons for and outcomes of the retention of certain members over others during an organization-wide downsizing effort, saying:

> Um, I'd like to say that they're trying to be more diverse, but I don't know how much, like— I was disappointed when they laid off so many people of different ethnicities, it was just like, "Okay...Well, now we're all white people," you know— […] Um, I think my lead did [comment], but as far as upper

> management, I don't think they even really noticed what they did. Whether it was just like, "Okay, you cut women, and then you cut ethnicities," it was like— It seemed weird. Maybe they were all low-performing, but we did have— People made a list—like the higher-ups, higher than the leads—made a list of people they wanted to save, or whatever, and for some reason, certain people were on this list, which I thought was odd. I mean, I felt myself, that I wasn't doing a very good job all the time, so I was surprised that I was still working there after that. Where[as] this other woman was doing so much better than me, I felt she was kicking ass and everything, and so I was like, so shocked. […] But unfortunately, it's kind of— Once you see this kind of stuff, it's like a slow bleed where people that you need there will leave because they'll notice these things. And [it'll] be like, "Why is this happening?" (Katie Roberts)

This example additionally reinforces participants' discussions on the cascading effect that a lack of visible members from underrepresented groups in diverse roles and hierarchical positions can have on the recruitment and retention of other members from such groups.

The remaining sections of this chapter therefore each address an important theme from participants' direct discussions of and recommendations for promoting the inclusion of underrepresented and marginalized groups within video game design organizations. The first theme of recommendations that I discuss relates directly to overcoming the hiring conundrum in order to place diverse people in diverse positions within an organization.

6.2.: Expanding and Diversifying the Network(s) of Connections

As I discussed in Chapter 4, most participants—across all organization sizes—described the hiring processes of their organizations as relying on predominantly informal approaches for recruiting and evaluating potential new members (such as proximity and utilizing current or former colleagues). Additionally, many participants stressed the need for video game design organizations to actively work to go beyond the "two degrees of separation" that currently connect members within most organizations, as these approaches have significant impacts for limiting the diversity of the candidates

being recruited and ultimately hired. Only when both individual members and their organizations work to expand their network(s) of connections, therefore, can an organization meaningfully reach the first step in promoting the inclusion of individuals from underrepresented and marginalized groups: placing diverse people in diverse positions within the organization.

This section accordingly discusses strategies that participants have used or recommend for expanding such networks, with the goal of ultimately including more members from underrepresented and marginalized groups within video game design organizations. I have broken these strategies down into sub-themes that target different phases within the recruitment and hiring process, including: before organizations/individuals need to hire, when organizations/individuals are actively trying to hire diverse members, and as organizations/individuals are trying to maintain and support diverse hiring over the long term.

6.2.1: Before Hiring

Several participants emphasized the importance of working to expand an individual's network of personal connections and potential collaborators well in advance of needing to hire for any specific diversity- or inclusion-related reason—or even just to hire new members more generally. One participant from a tiny organization discussed how he uses social media as an opportunity to seek out diverse voices and individuals within the game design industry from different backgrounds, saying:

> Well, I think it's mainly just who are the people that are in my network that I reach out to, basically. So, it's on Twitter, mainly, of who are the people that I have on my lists of, "Oh, these are people to reach out to when I'm looking for an artist, when I'm looking for a concept artist, when I'm looking for a programmer." But making sure that's not just white guys, white people. Not just men. […] And so, it's mostly just, like, people whose work I see come up on

> Twitter. And then I'll just make a note or add them to a list of, "Oh, people to keep an eye on" or, yeah, to say hey to.

This approach to proactively expanding one's network of connections and potential collaborators can be used at any time, by any individual within the industry. Moreover, this approach can potentially support inclusion within organizations of all sizes—particularly organizations with a wider span of control, or where these individuals are key decision-makers and/or involved in the hiring process—as these individuals are now able to recruit from a more diverse network of potential members.

In addition to expanding the network through the use of social media platforms, one participant emphasized the importance of regularly attending events that allow game designers to meet others from different backgrounds, saying:

> A big thing would just be to go out and meet more people, and it doesn't have to be a game jam. I think it is way more about having experience and getting perspective. If you are secluding yourself to just one friend group and just one experience—which is, for us, making the game—then you're not going to be able to get inspiration, [or to] draw on that experience. It's going to not only make you, I think, a better person, but it's going to make your content ultimately better. (Robyn Haley)

This practice additionally expands individuals' networks through extending their degree of proximity, including both geographic proximity (the "who's around" factor) and even potentially developing new friendships. As with extending the network through social media and other online approaches, this approach can potentially support inclusion within organizations of all sizes.

Finally, I emphasize again that *all* individuals within the field of video game design can potentially implement these suggestions in order to diversify their own personal network(s) of connections—regardless of their job role or position, the size of their organization, or other structural features of their organization. I argue that any individual who is interested in promoting the inclusion of underrepresented and

marginalized groups within video game design must first begin by taking such steps. Without such individual commitment, organizations—which are groups of individuals, after all—will not be able to meaningfully draw on (and attract) more diverse pools of potential members.

Proactively expanding your personal and organizational network(s) is not the only way to promote better inclusion during the hiring process; organizations can (and should) continue to expand their networks during periods of active hiring.

6.2.2: During the Hiring Process

Participants discussed several different ways in which organizations can continue to expand the network of potential members during the recruitment and hiring processes. In this sub-section, I discuss three main themes of recommendations: expanding the search, expanding the qualifications by which potential members are evaluated, and expanding the diversity of interviewers and their methods.

6.2.2.1: Expand Your Search

In total, 7 participants strongly emphasized that organizations must work to expand their network of potential candidates while actively hiring in order to significantly increase diversity amongst their members. Several participants discouraged the practice of only considering people that you personally know—especially close friends. As one participant suggested:

> Well, so in terms of bringing people in—I think when you recommend someone else to work for your company, [it's about] thinking about not just the very first person that comes to mind, but [thinking] through a few different people that you might want to recommend, and making sure that you're actually recommending a diverse pool. Because if the company already has fairly limited diversity and everyone just recommends their best friend who has the exact same background and experience as them, then it's just growing the company with the exact same

> kind of people. So, I think, being mindful of who you're recommending as potential new hires. (MJ Johns)

One participant from a tiny organization framed the importance of going beyond friends in the recruitment process as being especially significant for smaller organizations, saying:

> I guess my biggest tip for people who are on small teams is: don't hire your friends. Don't work with your friends. Work with people who are *not* your friends. Work with people you don't know. Or, get to know people that haven't been your friends before, become friends with them, then work with them. Then you can work with your friends. It's fine. But just make sure you have a lot of different people to work with. (Ava Pek)

Another participant from a tiny organization similarly discussed the importance—and the challenge—of looking beyond immediate friends in order to consider more diverse candidates, saying:

> So again, I love that a lot of my male friends are like, "I want to work on this with you." And I'm like— I'm not going to turn them down. Because I'm not at that sort of [level of] luxury. But I want to make sure that that doesn't close doors for other people of other identifications, honestly. Because I think that is how these certain cultures form—is that you just kind of hire who you know. (Sarah Abraham)

This example additionally highlights the importance of actively working to ensure that previous hiring decisions do not preclude potential recruitment of members from underrepresented backgrounds.

Other participants additionally emphasized the importance of going beyond "two degrees of separation" in recruiting potential members. One participant described how even well-intentioned initiatives to promote inclusion within an organization can reinforce this problem, saying:

> A company I worked for previously, they had trouble with diversity. And they wanted to fix it […] But the way they went about trying to fix it wasn't necessarily the greatest way to go about it. One of their biggest pushes for recruiting more diversity was advertising to their existing employees, "Hey if you

> recommend a friend that we can hire, and they happen to be diverse, you'll get a hiring bonus basically for helping the company be more diverse." But there was a problem with that approach. And that problem is [that] people who are in fields that are not already diverse are usually friends with people who are not diverse. And so, you get this situation where people will invite their friends, and their friends will invite their friends. And all of those people don't introduce new diversity to your company. (Ava Pek)

This participant then elaborated about different approaches to recruiting that could more meaningfully increase the diversity of potential members, adding:

> I tried recommending to them, "Hey, maybe we should go to the college career fair and look for diverse candidates." But there was such a focus on recruiting people who had the know-how, who could provide an immediate return on investment, that could be put on a project right away. People who had years of professional working experience. You're never going to get people like that. And you're specifically filtering out the people you need in your field to make it more diverse. […] That's all that they hired because those were the people who have the skills and experience to make the products they wanted, right? If you went to [a] college, and you're like, "I'm going to hire some student, who barely knows shit," [then] it's going to take a while. It's going to take years for them to get trained up to be able to do anything for your game or for your whatever project you're working on. […] So yeah, that would be one recommendation is, "[Don't] necessarily look for talent, but look for people who want to come into the industry." You just need to provide them the opportunity. (Ava Pek)

Another participant from a tiny organization similarly emphasized the importance of looking in less conventional places and of being willing to build up your team, saying:

> You have to reach out, and I think that's actually hard because you *know* your friends and so you ask your friends—and they have *their* friends, which are in some way connected—[and] so everyone sort of taps into the same pools constantly. […]. So [one company that has been successful], they specifically don't go to the top ten schools, they go to a bunch of other schools. Maybe they go to traditionally Black colleges, or they court single mothers by having—They're like, "You can't come to the job interview because you have kids? Well, here, we'll do a test from home," [and] so they basically accommodate people who might not be able to apply otherwise, and they reach out to people who would not normally be reached out to. And it turns out, that's actually made them one of the most diverse companies in tech, right now. Whereas the big ones are still kind of struggling, despite spending millions on "diversity initiatives." So, I

> think you just kind of have to go out and actively seek people from diverse backgrounds. (Sarah Abraham)

As this participant illustrates, "spending millions of dollars on diversity initiatives" in not necessary for an organization to extend its network of potential members—organizations of different sizes and other structural features can implement the suggestions made here by participants. Such approaches to expanding the search for diverse candidates, however, are not necessarily sufficient on their own to ensure a truly inclusive hiring process.

6.2.2.2: Expand Your Qualifications

In addition to emphasizing the importance of expanding where and how potential members are recruited, participants also discussed the significance of expanding the qualifications by which these candidates are judged. One participant discussed how the use of standard "checklists" can disadvantage applicants from underrepresented backgrounds, saying:

> And if hiring managers could diversify their pool of what they're looking for and what they consider acceptable— And a lot of times hiring managers are not even the people with the experience that understand what is needed for those roles. And so, they're *literally* just checking boxes: "Do they have a bachelor's degree?" And like I said, an easy, go-to way to cut out a huge part of the population is just by trying to check that box. And then, even a lot of things that are showing past achievements are focusing too narrowly. So, if you're looking at people who graduated from the top 10% of the class or something like that, that's narrowing down to people who didn't have family issues that prevented them from doing well in school. And any kind of looking for specific achievements, I think, if you don't understand why the person didn't get that achievement, then you're possibly using bias without realizing it. (MJ Johns)

As this participant indicates, the shorthand of relying on formal educational degrees and achievements is one of quickest ways to filter out unconventional applicants. Another participant similarly discussed both the potential inequity of using educational degrees as

a standard of qualification and the challenges of trying to figure out an equivalent, saying:

> I think one of the biggest socioeconomic filters is that you need a four-year degree for almost any position at the company. And that's not unique to the company I'm in—that's common throughout the industry. Although, in some companies, you might have a four-year degree *or* equivalent experience. But what that equivalent experience *is*, is very ambiguous. And so, I don't know how many people would read that and go, "Oh yes, I *have* the equivalent experience." Because you're looking at an entry-level job [and] the equivalent experience might be four years working in the game industry or something. And if it's ambiguous, then it's a hurdle. (Rachel Ripstra)

While the use of such formalized education requirements is more common in larger organizations, tiny organizations that hire contractors may also find themselves evaluating potential candidates using similar "checklists."

One alternative to using a formalized checklist of qualification is to evaluate the "equivalent experience" of a candidate based on a demonstration of related skills, such as assigning candidates tasks that would be part of the actual position under consideration. One studio head of a tiny-small organization discussed using such an approach, saying:

> One of the things that I have been trying to get more into is, if I'm bringing in new artists, I'll do an art test with them. And I try not to pass judgment on someone until I've seen the results of their art tests. So, as long as they have a basic understanding of the tools that we use, and they can articulate the experiences that they've [had working] on teams before, and they understand how the pipeline works for making a game, then I'm willing to give them an art test and see how their work is. […] Because I think really all that you need is people who do good work—and if you see their work, and you know that their work is good, then why would you not hire them? Why would you use these artificial barriers that are potentially keeping out people who could be very talented? (MJ Johns)

Additionally, multiple participants specified that organizations should pay applicants for completing these tasks, even if they are not ultimately hired. This approach may be particularly relevant for tiny organizations that are recruiting contractors (or other

members) specifically to complete particular tasks or to fill specific roles. Although this approach does not correspond perfectly with the suggestion of recruiting new members from underrepresented backgrounds with the specific intention to give them on-the-job training (which may work better for larger and more bureaucratic organizations), these two recommendations are not totally unreconcilable.

Finally, several participants addressed the importance of thinking critically throughout the hiring process about how to hire and support individuals from diverse backgrounds. One participant discussed the importance of not only hiring diverse candidates, but also of ensuring that those candidates themselves are invested in supporting diversity within the organization, saying:

> And so when I was hiring these student interns—I am a super-big fan of Google Drive so I have a Google form that I use for bringing in the intern applicants—and one of the questions I have on there is, I think, "Do you have a diverse background or experience or outlook that you feel would be valuable to the games industry and to this team?" And so, I try to make it, you know, like— It's not black and white. It's not like I want a certain number of women, a certain number of people of color. I want to know what their outlook is [and] how does their past experiences influence it? And I do use that answer as one of the primary things that I am looking at when I'm picking my team. And, I mean, I do try to avoid having a team of just straight white males—but other than that, it's really about, what is their perspective? Where are they coming from that they feel like they have something unique to bring to the team? Because I've read a lot about how diverse outlooks impact the success of teams. And not only do I personally feel like it's good to have diverse teams, I also have seen statistics that show that it actually makes teams better. And so, from the perspective of, "I'm trying to run a successful company and I want to do what's best for my company," I do feel that this is achieving both my personal passion and also what will be best for the company. (MJ Johns)

Notably, this example also illustrates one way to address some of the tensions that other participants expressed (and that I discussed in section 6.1.4), especially around how to equitably recruit for potential members from underrepresented groups.

Other participants discussed the importance of avoiding using any qualifications that could be related to evaluating the "cultural fit" of potential members. One participant from a large organization described the effect that hiring from groups that are "familiar" can have on limiting the diversity of an organization, saying:

> To some extent, I think part of the problem is that [the industry] has that heritage of being a male-dominated business and when you— If you're hiring people who you think are a good fit, [then] you generally are, therefore, looking for people who are somewhat like you, right? So that influences it. And you have a group that is aging in the business who have the experience, right? So, like, "Oh, I can hire this person who has one year of experience, or this person who has eight years of experience." Well, the person who has eight years of experience is more likely to be a white male, because that's what the business was eight years ago or whatever.

Another participant additionally discussed how avoiding hiring members based on "culture fit" also makes better, more diverse games, saying:

> And the whole culture fit thing, by the way, I think is bullshit. Because yeah, you're like, "Oh, I want someone who's like me to work at this company." Well, maybe, don't do that. Because [with] the people who are like you, you may have already come to a decision on a certain thing, on how to view something with that person. Like, I'd be really tentative [about] working on a game with a certain group of friends, even though they are diverse and I've worked with them a lot. But it is true that, as a group, we've all come to, like, sort of the same conclusion and perspective on things. […] But culture fit is often slang for, "Let's hire someone who looks like me," when you see it in action in a tech company. (Ava Pek)

This same participant stressed, however, that such negative effects of using "cultural fit" as a metric for evaluating the qualifications of both current and prospective members are not exclusively related to demographic identities:

> I'm a little worried about that, actually, because the company I work at right now, one of the things I've noticed is that everyone there plays board games. So, yeah, that's a culture thing for the company—but what about people who *don't* play board games? They might not play board games, but they might have good perspectives to add on the products we're making, even though they don't play board games. And what are you going to do if someone doesn't know how to play

> board games? […] And then they'll be self-conscious about it and it's not going to be great. And it doesn't help that most of the people are white males. But it's just one of the many things that you have to be considerate about. (Ava Pek)

Accordingly, both individuals and organizations should be careful to consider the effects that any kind of shared-culture norms may have on alienating both potential and current members of their organizations.

While some of these suggestions for expanding the range of qualifications evaluated during hiring may be easier for individuals within smaller organizations and organizations with fewer formalized policies around hiring to implement, none of these recommendations are completely beyond the ability of an organization to at least consider (and potentially adjust to accommodate). Finally, considering the process of evaluating candidates also involves considering *who* is doing the evaluating.

6.2.2.3: Expand Your Interviewers

In addition to expanding the search and the qualification criteria for potential members, a few participants discussed the role of the interviewer in promoting inclusion within the hiring process. One participant from a large organization described the effect that the presence of diverse interviewers had on her decision to join her current organization, saying:

> One of the reasons I wanted to work for the company was because it was the *very* first time when interviewing for a technical position that one of the interviewers on the *phone* screen was a woman. I have *never* been phone-screened by anybody but a dude before. […] And I was like, "This is interesting. I want to follow up on this." And yeah, when I got there, that carried through. It's not perfect, right? I think there's still screening questions and degree requirements and things that filter out people that could still be really good team members. But it's better than anywhere else I've worked. (Rachel Ripstra)

In contrast to this positive experience, another participant described frustration with the way that a recent interview within her "day job" IT organization had been handled, saying:

> For example, we have a certain employee who's not terribly great at their job and we want to replace them with someone else. And I've made a recommendation to my boss about who to hire for that position. And they had an interview and it went pretty good. But then he realized that he had not written a test and he does not know what kind of test to give to that person. And it might not seem obvious, but to someone like me I'm like, "Well, what about the test you wrote for that other guy?" Right? He *didn't* write one. He never wrote a test for that guy. Why? Because he's white, probably, and he looks exactly like him. They have similar backgrounds, similar perspectives. He may have never really necessarily felt the need to test him. And the person I recommended is a woman. […] So, of course, he may not have necessarily *explicitly* thought about it. But when you look at the situation and you say, "Well, why are things this way?" It seems very odd that the situation unfolded the way it did. He *should* have tested the guy he hired that he doesn't like anymore. That should have happened, right? And it seems really odd to me that *somehow* when I recommend someone, [then] he doesn't have a test for them. And that person he hired *had* previous professional working experience that he could relate [to]. But the person I recommended *doesn't*—they have a high school education. So, there's a lot of factors in that situation where I'm like, "Well, why do you give this other guy an easier time?" When I was hired as a programmer, I had to take a test even though I had all of my work experience to show for it. So, it's very strange sometimes that people sometimes just get a pass on things that isn't very obvious to the people in the situations. (Ava Pek)

This example additionally illustrates the potentially detrimental effects that skills testing (as described in the section above) can have on supporting greater inclusion within the hiring process—especially if such tests are not carefully considered and equitably used.

Both individuals and organizations can accordingly go a long way towards promoting the inclusion of underrepresented groups by expanding the search for potential candidates, addressing the qualifications that candidates are evaluated by, and considering the interviewers (and their protocols) that are assessing diverse candidates. Even if this recruitment process successfully results in increasing the proportion of

diverse people in diverse positions within an organization, however, the impetus to expand and diversify a network(s) of current and potential collaborators still remains.

6.2.3: Keep Expanding

As I have discussed at several points within this chapter, participants emphasize the importance of perceived support—for both specific demographic groups and for inclusion more generally—within an organization in order to retain members from underrepresented and marginalized groups. Additionally, several participants have articulated the challenge of being the "unicorn" (a single member of a demographic group) within an organization. In order to address these issues and to continue the successful hiring and retainment of members of underrepresented groups, individuals and organizations must both be continually working to expand and diversify their network(s) of connections.

Individual organization members can always—and continually—return to the first phase of this process and continue following the suggestions that I have described in section 6.2.1. While organizations as a whole can also implement those same suggestions, they may also be able to provide additional structure towards supporting greater network expansion. For example, one participant suggested that organizations could sponsor internal events and visits to external sites as learning activities, saying:

> There might have been something more to be said about supporting a diverse workforce within the field, [in a way that] is not focusing so much on "okay, we absolutely have to hire someone of this background," as it is on maybe allocating time to have meetings about diversity and assigning field trips, even. And things that encourage getting out of the office or getting out of your usual thinking patterns. It shouldn't be something so much as "we have to hire this person," as exercises in open-mindedness. (Robyn Haley)

She additionally compared this kind of event to more individual-focused networking events currently within the industry, saying:

> It would even be cool if studios started visiting other studios and seeing not only how they work, but who they're working with. I mean we do have things like Game Dev Night Out in Austin, which has been great, but I remember when I first moved to Austin and went to the Dev Nights, it was pretty bad. […] Yeah. In terms of diversity and how people interacted with—I don't know about others, but with me in particular, I did not get a warm welcome. And I still receive this to this day, where there's a *lot* of people in the industry that want to talk *at* you, not with you, and want you to just stroke their ego, and it is [laughs] a way bigger problem than game development. (Robyn Haley)

Another participant similarly discussed challenges that many networking events have in actually bringing designers from diverse backgrounds together in the same room, saying:

> I definitely think there's a problem with, like—so, kind of like high school. You know, you've got these people over here and these people over here and like there's women in games, or there's just everybody, or then there's events where it's definitely more male-centered. […] Because I think that one of the problems is mentorship, going out there, finding people that are interested in this, and not thinking of a certain person, just anyone that's interested. And we— We're trying to do that. There's certain events, though, that definitely skew a certain way. (Katie Roberts)

While individual members of an organization can always sponsor or coordinate such activities, the overall effect on the diversity within an organization will likely be more positive if more members are involved—and if these efforts are structurally and financially supported.

Finally, organizations of different sizes can also challenge themselves and their members to think more creatively about how they might help to expand the network for everyone. One participant, for example, discussed actively working to use even a tiny-small organization as potential platform to lift people from underrepresented groups into the industry and to diversify the network as a whole, saying:

> So, one of the things that I just really wanted to focus on when I started my studio was having a diverse team. And so, I have tried really hard to do that when I'm bringing on interns, in particular. Because one of the things I've noticed from talking to other studio heads, specifically in Austin, is that they—almost across the board—won't hire someone unless they've either shipped a game already, or had a respected internship. And so, my goal was: if I can make sure that I have diverse people in my internship, [then] that primes them for most likely [being able] to actually get jobs at these studios. And [so] I'm sort of tangentially improving the diversity of the pool of people being hired. And actually, I will say that people who have gone through my internship do have a much higher rate of getting hired than their fellow classmates. I don't have specific numbers, but almost all—I think about 80%—of people who've done my internship have gone on to have jobs in the game industry. (MJ Johns)

While not every organization can implement the same strategy of supporting inclusion specifically through internships, this example illustrates the positive outcomes that can be achieved by having a clear goal for supporting the inclusion of underrepresented groups and then developing concrete steps towards accomplishing that goal.

Promoting the inclusion of traditionally underrepresented and marginalized groups within game design organizations, however, is not as simple as just hiring and placing more individuals in different positions. Accordingly, the last two sections of this chapter discuss themes related to addressing factors that keep individuals from such groups involved within their organization as valued, equal, and engaged members.

6.3: Active Visibility and Engaged Support

In section 6.1, I discussed the importance of having diverse members in diverse positions throughout an organization in terms of both supporting individuals from unrepresented groups and supporting diverse content in the final game products. Participants additionally emphasized the need to support members of underrepresented groups in order to both recruit and retain them within organizations. These actions, however, must be perceptible and meaningful to members from underrepresented and marginalized groups in order to be truly effective for promoting inclusion. Moreover,

maintaining visible diversity and inclusion within an organization is a continual process that requires conscious and engaged effort.

In Chapter 4, I discussed challenges found in organizations of every size that can affect the daily work tasks of individuals, as well as how many of these challenges particularly affect organization members from underrepresented or marginalized groups. I additionally discussed how the process of equal and collaborative coordination around values can also have an important impact on making important decisions about the design of a game, including having a significant impact on the team's understanding of diversity within the game. This type of coordination also potentially allows for greater input of diverse team members, including members from underrepresented and marginalized groups—but only if all members are equally valued and considered. Finally, I discussed the importance of key decision-makers who are invested in supporting diversity—especially in organizations that centralize and specialize the decision-making process—and how a goal of "consensus enough" can open the door to some middle ground in an organization's decision-making approach, especially when considering important decisions related to diversity. Each of these aspects of an organization's structure has the potential to directly impact the daily work of members from underrepresented and marginalized groups and to either support these members' inclusion or to inhibit equal inclusion.

This section accordingly discusses several significant strategies that participants from organizations with different structural features have used or recommend for actively supporting members from underrepresented groups in their daily work within video game design organizations. I have divided these strategies into thematic sub-sections that address different approaches to increasing the active visibility of and engaged support for members from underrepresented and marginalized groups within video game design

organizations, including: the role(s) that individual members—particularly, but not exclusively, non-marginalized members—can play in supporting inclusion within their everyday work; the importance of accountable mentors and champions for supporting and advancing members from underrepresented groups; the necessity of sympathetic and engaged decision makers; and the impact of inclusion-related organizational infrastructure.

6.3.1: Support from (Non-Marginalized) Members

Several participants directly addressed the role—and the corresponding responsibility—that individual members (particularly non-marginalized members) could have in supporting the inclusion of underrepresented groups within organizations of different structural features. This sub-section discusses several key areas where participants indicated that such support is particularly valuable, including: the importance of listening to marginalized members and being receptive to their feedback; the potential impacts of speaking up in response to a problem with inclusion; and being supportive of tool selection and use decisions that may affect the inclusion of diverse members.

Additionally, each of the recommendations in this section can be implemented both at an individual level and/or with the support of an organization of any size.

6.3.1.1: Listen and Be Receptive

In total, 5 participants discussed the importance of simply listening to organization members from different backgrounds and of being receptive to learning about the challenges that many members from underrepresented and marginalized groups face. One participant from a tiny organization discussed the challenges involved in being

aware of the perspectives of different members within an organization, including both marginalized and non-marginalized members, saying:

> Just being open and listening [to issues that members from underrepresented groups have]. […] It's tricky because everyone's reactions to that are going to be different. And there are the toxicity issues, and that plays into it specifically. I think part of the key is just being aware of who you have and who you're talking to and what the best ways to talk to them about it are to produce a specific result. Getting into a shouting match isn't going to do anything. And if you just say something that sounds like—like, I feel like I could probably just say "microaggressions" to you, and you would understand what I was saying there and things like that—whereas, saying it to some other person, if they had heard of it [in a different context], there's a potential that [they] would immediately discount whatever you were saying because it sounded like a buzzword to them and they've tied it with a bunch of negative things. So really tailoring how you handle it to who you're [talking to] when you can, which is something we can sort of do because we're small, whereas a big group has to work on a policy, I'll bet. (Jonathan Kittell-Queller)

Another participant similarly discussed the responsibility of listening and challenging your own perceptions that are involved in being an ally to marginalized members, saying:

> Be willing to listen, and be willing to admit you're wrong, and realize that admitting you're wrong doesn't make you a bad person. Admitting you're wrong is the first step toward *being* a good person and fixing something that hurt someone else. And it's okay to take ownership of that. I think that […] a fear of punishment ends up outweighing the desire for growth. And no one wants to be punished. No one wants to be seen as a bad person. But with an inability to face the bad choices we make and the bad things we do to people, it allows those bad choices and decisions to live on in perpetuity because they're never challenged. And you go on thinking, "I'm a good guy. I'm a good person. I'm not racist. I'm not sexist," even though you might be hurting people left and right.

He additionally described the effects of engaging with and listening to marginalized members of his small organization on his own game design work, saying:

> Well, I think it made me a lot more observant to my own art and how I create it. So, for instance, when we're making armor sets at our studio right now, the usual way we would operate is we would make it for the warrior, male warrior, first and kind extrapolate that onto the other player sets. And so, what I've started doing is starting with the female rogue first and *she's* the focus and we're going to be

> making armor for *her* and then we're going to extrapolate that onto the other sets. Just little things like that. Or I don't make form-fitting boob armor because I think it's stupid. It's just like, "Why would you create something that would drive a sword into the middle of your chest?" It's dumb. And while I had a really good talk with my coworker about it and she said that, you know, "It's one thing to do that, but it's okay for women to be sexy as well." […] So, I think it made me realize that I need to not only be a good ally on my own, but I need to listen *more* than I talk, and more than I create, and ask other people whose lives I'm trying to represent, "Is this a fair representation of you and is this what *you* want from the experience?" And I think that that, to a degree, is what being a good ally is, is listening.

This example illustrates how listening to members from underrepresented groups can potentially not only improve *their* experiences within the organization but can also enhance the life and the work of the listener. Another participant emphasized the importance of consciously creating a supportive environment where diverse members can feel comfortable contributing to discussions, saying:

> I think a lot of the process should be adapted to diverse collaboration styles. [For example,] the structure of [a creative] meeting, without intending it, [can be such] that somebody with a different personality or perspective literally never feels comfortable talking and [thus] doesn't. And so, you can have a diverse person on the team who never contributes. And then you didn't benefit from their perspective. And so that is a lot of personality understanding and meeting management, for example. But there's little tricks and tips. There's this one rule, for example, where after it seems like everybody's done talking and everyone's contributed, you wait for seven seconds. In your head [you're counting to seven], while you're standing in front of the team. You're quiet and nobody's saying anything. […] And, oh my God, if you don't get a lot of introverts that speak up in those seven seconds because they are just waiting to talk. They had something to say the whole time. […] And so, it does take a little bit of proactive understanding [of] personalities, making people comfortable, and making sure they get heard. […] You just have to learn how to draw people out and make a comfortable safe space for them to communicate and participate. (Randolph Smith)

Accordingly, without proactively creating the opportunity for diverse members to speak up and preparing yourself to be receptive, the goal of listening to marginalized members cannot be meaningfully achieved.

Another important role of an ally, however, is to speak up at key moments.

6.3.1.2: If You See Something, Say Something

Another 3 participants discussed the role that non-marginalized members of an organization could play in identifying and addressing harmful behaviors. One participant expressed that, while speaking up to criticize non-inclusive behaviors could be potentially uncomfortable, the effort was still critical to promoting inclusion, saying:

> I think that individuals can— Like, something that white people can do is just speak up when they see something [fucked up] going on. […] Yeah, being aware of it and then speaking up and not prioritizing comfort over— Yeah. […] Like, "Hey, this person is not getting recognition that they deserve," or actually giving the recognition [yourself] in a meeting or something. Or [saying], "Hey, this area of the game—I know maybe it would take longer to change the writing, but I feel the writing is a little problematic," or "it's insensitive to say this word." Yeah, or, "Maybe we should get other people into the room to look at this because I don't really feel like we have the authority to say this."

Similarly, one participant from a large organization discussed a specific instance in which the support of another member had made a significant impact both on validating her perspective and on supporting greater diversity within the game product, saying:

> Well, I know for a fact that it really had an impact on one of the writers, because he started realizing what was happening—as far as like, making everything masculine, or everything male. So, he started going, "You know what? Uh, let's include more female characters, and let's, you know, try to keep that in mind. Because we did get feedback when we launched [this game], [that] even though it was more diverse as far as the characters went, there were still people saying, 'What is wrong, this is one way over the other.'" And so, he definitely tried. Because I had fought—I had tried to fight for it so bad—he definitely would switch things up and just be like, "We need to do this," and he had more pull with the creative director. So, I'm just like, "Thank you." (Katie Roberts)

As this example illustrates, speaking up to support members from marginalized groups can have a significant impact both for individuals and for organizations. Members from organizations of all sizes and different structural features can address non-inclusive and

harmful behaviors within their organization. It may certainly be uncomfortable (or even have potential impacts on a member's position) for members from non-marginalized groups to speak out, especially within more bureaucratic organizations. Yet it is even more difficult—if not impossible—for members from marginalized groups to address such issues on their own, without support.

6.3.1.3: Adapt Your Tool Selection

Finally, a few participants emphasized the importance of adapting the selection and use of collaborative tools to accommodate members from diverse backgrounds. For example, one studio head of a tiny-small organization discussed the deliberate rationale behind selecting a specific tool, saying:

> So, part of the reason why I use Unity Collaborate, as I mentioned, is because of people not being comfortable with SVN. I do think there's a lot of assumptions that go into the types of tools we're using, and like, assuming that everybody uses the same tools, which is generally not the case. […] So, I think, looking at your own background and thinking about what assumptions you're making about the tools that you use, before putting those tools on other people [is important]. […] I think it's maybe an easier on-boarding tool for people to say "Hey, yeah, I actually have used version control, it was Unity Collaborate" and have [other] people be like, "Oh, yeah, that's—I guess—version control." But it gives people sort of a comfortable entry point. And for any tool, I think you want your team to be comfortable with it. So, [it's about] either thinking critically about what assumptions you're making about what tools you use, or actually discussing with the team what everyone is most comfortable with. (MJ Johns)

In this case, a single key decision-maker in a tiny-small organization has particular authority over the selection and use of a specific and critical tool and can exercise that authority to select a tool that may be more inclusive to members from diverse backgrounds. This approach could also potentially be adapted to support inclusion in tool use within larger bureaucratic organizations with similar coordination and/or decision-

making processes, as well as potentially in tiny organizations that function as a single team.

Another participant from a tiny organization described a somewhat different approach to supporting diversity in tool use, saying:

> I think there is a *lot* of diversity into what people like in their tools in collaboration. Or their style, and what tools, and the whole thing. […] And so, you always wind up in this negotiation process with your team, because that's the customer for all this process—they're the ones who have to say it's working or not, right—to figure out what the best processes are and what the rules of it are. So, you might think that something is working great. And then your team might be like, "Can we just never have any chat in this channel? Like *all* the chat—the second you start chatting, I want it in this channel." And so, you're like, "That's what our team wants. That's their personalities. That's the structure." That comes up because we're heavily relying on Slack for official communication. And that's too much noise for people. So, it just depends, project to project. (Randolph Smith)

Accordingly, in tiny organizations that use mutual adjustment or negotiation to make tool use decisions, organization members can instead work to understand and accommodate the specific needs of networked members. Note that these examples particularly illustrate how organizations can better accommodate diversity in tool selection and use among their current members; in section 6.3.4, I additionally discuss how the relationship between tool selection and external infrastructure can potentially affect inclusion within the field more broadly.

One of the best ways to support listening and being receptive, speaking about inequity and inclusion issues, and adapting tool selection and use is for individual members (especially influential members) to successfully model these behaviors. Accordingly, another significant way that organizations can promote the inclusion of members from underrepresented backgrounds is through supporting accountable mentors and champions.

6.3.2: Accountable Mentorship and Championship

In total, 6 participants discussed the importance of mentorship for developing important skills and/or helping organization members to advance their careers. While mentorship can play a significant role in developing the developing the career of all individuals in game design (across all job roles), it is especially valuable for promoting the inclusion of members from underrepresented and marginalized groups.

Several participants discussed the role that mentorship can play in counteracting social and structural factors that work against marginalized members within an organization, including the fact that non-marginalized members are significantly more likely to benefit from both tacit and explicit support within the organization. One participant from a large organization discussed her ongoing struggles to get equal recognition for her work at length, saying:

> Set people up for success. Because I feel like a lot of the times, there are certain people that they will set up for success. Like, there was the white male designer that got all the work because the creative director was much more into that kind of person. […] So, I think it's definitely a mixture of things. I think it's definitely—There are people above that are advocating, like that creative director, who was like, "Oh, I took a shine to this guy, even though he's not doing work very well. I like him for whatever reason. So, he's obviously going to get this [promotion]." But also, just because I tend to put my head down and do my work, and another guy can do that and it's like, "Okay, well, you did all of your work. Here you go, here's a raise." Whereas I kind of have to stand out and be like, "What is happening? Why I am being told I'm so great and then I'm sitting here at the same position forever." It's been a frustrating thing, and luckily, I have support from some people, so I'm able to stand up and do that. But it's very hard to go to someone at this high level and say, "What's going on?" (Katie Roberts)

Another participant discussed the impact that mentorship can have in counteracting this kind of inequity, saying:

> And then, of course, mentorship. So, women still often don't ask for raises or promotions as much as men do. They don't necessarily ask to be put into leadership roles, so you have to sort of have that mentorship in place to help

> people who may not feel like [they are capable]. They're like, "Maybe I'm *not* the most competent," and they're probably equally competent to all their coworkers, it just doesn't— From their perspective, they don't feel like that. So, I think you need to have a little bit more, again, sensitivity, mentorship. (Sarah Abraham)

These examples additionally highlight the role that mentors can have in supporting the positive self-talk (or personal affirmation) that many such members from marginalized groups must engage in as a form of extra emotional labor. (I additionally discuss this in Section 6.4).

The traditional role of mentors in many organizations, however, is more focused specifically on cultivating newer members' skills and their familiarity with the organization—and thus may not encompass this kind of active advocacy for members from underrepresented groups. Accordingly, one participant in a very large organization discussed his preference for using the term "champion" to specify this more active role, saying:

> [Some members of my organization have started] to talk about the difference between being a *mentor* to someone and then being a *champion* for someone, with mentoring being teaching, giving you a few pointers, helping you learn the ropes. Versus championing, which is like, "I see this position over here. I'm going to go put myself on the line and help you get that job. Because that's your next step." […] So, mentoring people is a part of my job description as a senior-level artist. Anytime that somebody comes in and knows less than me, it's my workplace obligation to teach them, even if it's like, "Hey. Coffee machine's over there. Don't push the red button." You know? [laughs] But championing is really—it's much more involved, and the very definition of it means that somebody is going to take a risk. Somebody who's higher than you is going to take a risk. And I think that that relationship is also something that needs to be coached—the nature of it and what it might mean. Because what I've seen is that because certain individuals *didn't* have champions, they are now championing people in a way that's toxic. (Thomas Jung)

When I asked him about how this relationship could potentially be toxic, he elaborated:

> Well, for instance, somebody gets a promotion. And they've been championed by an individual. And it becomes very clear that person is not only poorly-suited for that promotion but is an awful person. [laughs] But because the culture of

> championing [...] is not well-developed, the person who championed this individual doesn't know how to back down from that decision. She doesn't know how to say, "Made a bad call. So, I'm not going to back that person anymore," or, "I'm going to coach them in a particular way." Rather, the tendency would be to just, when complaints come their way, it's just a blank stare, like, "I don't even understand the words you said to me because they speak negatively to somebody that I've helped to push forward." […] It is a long-term relationship. And the person who champions an individual is in many ways responsible for them moving forward if they fail, sadly. (Thomas Jung)

Accordingly, the role of champion additionally entails significant responsibility.

Organizations must therefore additionally ensure that mentors and champions are held accountable (and are recognized) for performing this role, which usually involves extra work. One participant from a large organization who had struggled with a lack of mentorship described how the mentor who had been working with her simply walked away from that role without apparent consequence:

> Like, with me I have no mentor, I've never had a mentor, ever. […] One of the problems that I've felt when I first got hired in my company was that the person that was sent to [guide] me just really didn't care. He didn't care, he didn't want to set me up for success or anything. So, I was kind of lost, and I had to do it all myself. I had to figure out things myself. So, I think that's a real problem when somebody is so intimidated by their environment and then you, you know, put them in there without training, and they're so overwhelmed. It just kind of makes them want to quit. […] So, [the guy] who said that he was going to mentor me kind of dropped off when I tried to provide, I guess, in design, stuff that he didn't really like. Which, if he's going to be a mentor, [then] he should tell me why he thinks that's wrong, or why he doesn't like that. So I can better understand. Instead of just kicking me out and being like, "Ehhhhh, I don't have time for this." (Katie Roberts)

In addition to recognizing the extra labor involved in mentoring (which this mentor was unable or unwilling to provide), organizations should be aware of the extra—and often invisible—labor that members from underrepresented groups take on when they feel extra pressure or personal motivation to adopt these mentoring roles. (I discuss this in

more detail in section 6.4, as well.) Finally, members from underrepresented groups should not exclusively be asked to take on these roles.

Although individuals from organizations of all sizes can take on a mentorship role, mentors may be more useful in larger organizations (especially ones with multiple members fulfilling the same or similar role, and with some degree of hierarchy). Similarly, while the role of champions is important for organizations of all sizes and with diverse structural features, champions may be particularly helpful within more bureaucratic organizations with a tighter span of control and formalized paths of communication.

The importance of individual mentors and champions is additionally related to the significance of sympathetic and engaged decision makers.

6.3.3: Sympathetic and Engaged Decision Makers

As I discussed in Chapter 4 and again in Section 6.1, the process of making decisions is a key structural feature of different organizations that is related both to the demographic constitution of the organization and to the content of game products. Accordingly, the role of sympathetic and engaged decision makers is crucial in supporting the ongoing inclusion of members of underrepresented groups.

As a basic first step, organization members need to have the desire to support diversity. As indicated by the level of importance that they place on supporting diversity and diverse individuals (discussed in section 6.1 of this chapter), all participants in this study have expressed such an interest. In addition to this desire, however, members must feel that they actually have the agency within their organization to affect meaningful decisions that are related to diversity and inclusion. In addition to several examples that I have discussed thus far of where participants felt that they were unable to make have a

meaningful impact within their organization (see Chapters 4 and 5, and section 6.1), one participant expressed how a lack of agency previously affected his ability to address stereotypical game content, saying:

> We had a Black character in that game that we—Our job was basically just to put in the story. We didn't write the story, we just put it in. I felt that they were written a little stereotypically and a little racist and— The token Black guy. And I didn't care for that, but I didn't— We don't have any power to change it. I mean, doing so— Maybe it would have been [received] but, man, that's a mountain that I just didn't—a fight that I didn't want to cross. Because I'd have to convince so many people, right? We were in the position of, "We're doing what you say because that's how we're getting paid." And it's probably just—I don't think our president would've been receptive to taking that moral stance on certain things.

In this case, a feeling of a complete lack of agency discouraged the participant to even suggest making changes that might better support diversity within the game.

In contrast to members who are sympathetic to increasing diversity and/or inclusion but lack the agency to affect key decisions, sympathetic decision-makers are not always proactive about using their agency. As I discussed particularly in reference to the hiring conundrum, many individuals who have the desire to increase diversity within their organization—and are actually involved in recruitment and hiring processes—may find themselves limited to using phrases such as "If only," or "I wish," in reference to making significant progress towards those goals. As one participant expressed, such sympathetic decision makers often do not think as proactively about sustaining inclusion efforts as they perhaps should:

> My feeling is that people are aware of the language of inclusion, and they know it's a thing. And a lot of them are putting more than lip service into it. So that's great—there's been some good progress. However, they're not necessarily— They don't have a part of their mind that's continuously attentive to it. And maybe not because they're evil people or anything, but rather, just because they are themselves. And they think like themselves every day. And they're not proactively noticing the opportunities where they can be pushing on this in a proactive way. So, if you walked up to them and said, "Should we hire more

> people of color in our organization?" They would be like, "Yeah. That would be great." But then when they write the job description, they don't say, "We actively encourage people of diverse backgrounds to apply." Right? And so, I have kind of pushed some of this stuff into the organizations I've been a part of, and they're like, "Yeah. Great!" And then they do it. But then, if I leave, are they still going to do it, or are they going to forget again? And are they [actually] forgetting? Or are they like, "No. We really just want the best candidate," and they have this sort of artificial idea about what that means. I don't think we're far enough yet at all, but at least there's dialogue about it now. And that's a big step. (Randolph Smith)

Such a commitment to proactively working to support the inclusion of underrepresented and marginalized groups is therefore necessary for recruiting and retaining diverse members over the longer term.

Decision makers must accordingly be both sympathetic *and* engaged in order to successfully promote diversity and inclusion within their organization. Such decision makers may be present in organizations with a variety of features (including those that employ centralized decision-making, those that use a rotating leadership model, and those that make decisions through consensus). Additionally, another key feature of sympathetic and engaged decision makers is they should not get defensive about making mistakes. One participant from a large organization described a recent such mistake, and how it was addressed within the organization, saying:

> When our mural was put up just last week, people started really talking about it and they loved the idea of it. And then a few people came up and they were like, "Do you notice we only have 1 female character on there? There are a lot of female characters [in this franchise]," and I was like, "Holy shit. You're right," and then I was like—There's 9 characters. One of them is female. I went to one of our other murals, and it's 11 male characters to 2 female characters, and then I started going through all of the painted canvas that we have in the office, and I realized it was 36 male characters to 10 female characters, and I was like, "That's really weird. I never thought about that," and now I'm very well aware of it. I brought it up with my facilities manager. […] I was like, "It's just a bit of feedback that I got from, already, a handful of people, something that I think we should take as feedback for the next mural that we actually decide to make," and her answer was very defensive, immediately, and we haven't talked about it since, but it was very much just a, "Yeah, but at least we put 1 in, and we're following

> the same ratio that [the franchise has]," and I was like, "Actually, you're not." […] And I think it's something we should recognize not just as like, "Oh, shit, we messed up," [but that] we should improve this [laughs]. […] I'll have to see what happens in the next few weeks and then once we start doing the next mural, how that's actually affected that. But when it comes to any other communications we've had about feedback, I've actually noticed a lot more progress and her being able to take a lot of that feedback. I think this one caught her by surprise [laughs]. […] I am looking forward to it. She has made a lot of progress. I like that.

Accordingly, while a defensive immediate reaction to such mistakes is very understandable, it is the responsibility of sympathetic and engaged decision makers to go beyond this initial impulse and to stay committed to promoting diversity and inclusion within their organization.

In contrast, organization members who are deeply engaged (that is, individuals who express a strong passion for promoting diversity and inclusion within the organization, and proactively consider how to do so) but feel that they lack agency will often either leave an organization entirely or will "check out" of the creative process—even (or perhaps particularly) in situations where diversity-related issues have become significant. In section 6.1, for example, I discussed at length the example of the writer whose inability to successfully propose a more diverse team of characters had left him feeling "less empowered." Another participant from a very large organization similarly described a situation where he was unable to affect meaningful change towards improving the way that "Asian themes" were being handled with a game project (also described in section 6.1), saying:

> I totally checked out on that project. Once the first couple of instances where [the response was] "I heard what you said, but we're going to do this anyway." [I was like,] "Okay." And when that happens often enough with any creative individual, you just get to a point where you say, ''Why don't you just tell me what to do and I'll do it.'' […] I just didn't care. I was just like, ''Okay, well, you just tell me what to do and I'll do it.'' […] [You can't go anywhere from there]—you've made your argument as skillful as you can. You've given them some sort of information. [And the response is], "Yeah, but. But I want to do this." […] "Okay,

> I'll just do it. Just tell me what to do and I'll do it." Which is a nightmare scenario for anybody who's really creative. (Thomas Jung)

In order to avoid such a "nightmare scenario," sympathetic and engaged decision makers should additionally work to identify, prevent, and diffuse such situations.

Finally, sympathetic and engaged decision makers are especially crucial for developing and maintaining inclusion-related infrastructure.

6.3.4: Inclusion-related Infrastructure

Several participants directly discussed the importance of organizations putting in place some kind of infrastructure to support diversity and/or promote inclusion that is larger than simply making individual members responsible for these goals. This kind of infrastructure could be either internally- or externally-focused (or both).

6.3.4.1: External Infrastructure

Several participants emphasized that organizations who expressed an interest in broadening participation within the video game design field should consider ways to support individuals beyond solely those currently within the organization. One participant from a large organization discussed such a suggestion at length, saying:

> So, I would like to see companies take a *proactive* approach. I would like to see companies say, "We are going to start doing some kind of Steam development program in schools," or at the game universities. [Or], "We're going to fund a program at UT that gives a scholarship to X number of people who fit some version of diversity [and] who agree that in exchange for the scholarship, they'll come work at our company as interns or as employees when they graduate, for X period of time," or whatever. Like, proactively say, "This is a priority, and we are going to spend some of our time and resources to create something that *actively* encourages this." And I feel like if every game studio did that, then they could jumpstart a more diverse workforce. And they don't have to do it on their own. They could say, "Somebody else has set this up, but we're going to put in something into that. We're going to give money," or, "we're going to give time," or, "we're going to have people come to teach," or *whatever* to just encourage people to go into this line of work and to acknowledge like, "There's a value in

> having a more diverse industry. This will help our industry as a whole. Let's start making it happen." Instead of [just saying], "Yes, we absolutely will hire people of any background. As long as they are the best-qualified person." That's great [laughs], but that's the barest minimum.

Notably, this participant emphasizes that tackling larger infrastructural issues is something that should be done from multiple angles and by multiple organizations. The suggestion to focus on improving inclusion within the education "pipeline" into the industry (along with similar suggestions that I previously discussed in this chapter) additionally echoes concerns about fixing the STEM educational pipeline more broadly (discussed in Chapter 2).

When asked how they "[acquired] the skills necessary to fulfill the collaborative video game design role (or roles) that [they] described," nearly all participants discussed acquiring their relevant skills through independent self-study or through working on hobby projects. Only a few additionally discussed a direct connection between completing a formal education program and the skills needed for their current role. As discussed in previous sections, however, several participants did express concern that current formal educational models (and the qualifications associated with those models) might be excluding potential designers from underrepresented and marginalized backgrounds.

The need to balance ongoing self-education with following a (at least somewhat) recognized path to skill acquisition may be especially true in regard to learning about collaborative tool selection and use. As I discussed above in section 6.3.1 and in Chapter 5, a few participants indicated that an unfamiliarity with certain tools—especially tools which require a more traditionally computer science-based skillset, such as version management control—may be a barrier to entry (or to equal treatment) for some game

design organizations. This participant's suggestion to sponsor a "Steam[52] development program," therefore, might also be extended to other tools as a way to both supplement self-directed learning and to facilitate some normalization of skills for individuals who might otherwise lack access to these technologies through formalized educational curricula. Such externally-focused initiatives would potentially benefit a range of future professionals and hopefully "help [the] industry as a whole" to normalize and equalize specific skills and tool familiarity.

6.3.4.2: Internal Infrastructure

In contrast to these more externally-focused initiatives, other participants discussed the positive effects that internally-focused infrastructure can have in supporting diverse organization members. For example, one participant from a large organization described the role of organizationally-focused support groups, saying:

> I think at a corporate level, they're very supportive in the way they hire and in the organizations that they support. Like, our studio, for instance just recently kicked off the Austin chapter of the [company] pride organization, and we get budget for it. Because we're trying to figure out other things that we can do to sort of openly support people of different backgrounds. […] We also have Women in [The Organization] group, which has its own funding and people who are dedicated to trying to figure out the question of how to recognize the gaps between the two genders. So, they are making the effort at the corporate level, I believe. I think that our *local* culture could use a lot of work. Yeah. I was disappointed that— So I went to the Pride group mixer, and I was disappointed that none of the studio-level leadership was there. That's disappointing. Like, I get it guys, you guys are all busy. But this is important. […] So yeah, so the [Women's group] will hold workshops. We had a communication workshop that came to us [that] started specifically as one of their initiatives. They brought in a consultant, they did a workshop, and it was specifically geared toward the women in that organization. But it was so great that they brought out that same person to our studio and opened it up to everyone. And I think [that group also has] a regular lunch, which

[52] Steam is a digital distribution platform that helps game creators to bootstrap some aspects of their game development, distribution, and maintenance. There is also a simplified "Steam for Schools" version of the software.

> I believe is paid for by the company. […] I certainly hope so. There has been a concerted effort to sort of reignite that group. I think something happened, and it fizzled. And I think that recently, someone at headquarters said, "No, we're going to do this again." And then suddenly, there was a call for people to come forward, like, "Are you interested in leading the local group at your studio?" Etc., etc. So it's really, really dependent on that. But one thing that it has done is sort of shown individuals at the studio, "Here are your friends. The people who showed up at the mixer, they're the ones who aren't going to judge you for whatever." (Thomas Jung)

Notably, these examples illustrate the significance of supporting such infrastructure with both concrete statements of support and financial investment.

These forms of more institutionally-oriented support, however must be also be actively and visibly supported by the organization. One participant emphasized that even well-intentioned efforts to promote inclusion within an organization are meaningless if they are also powerless, saying:

> It's hard as an individual person. At this company I worked for that acquired, it also happened to be the case that they were so concerned about diversity that they decided to form an organization within the company about trying to make the company more diverse. But as it turns out, creating a group of people who are concerned about diversity makes it a lot easier to silo away that kind of discussion. And it turned out that this group never really got much power to do *anything,* really. They couldn't have any input on the hiring process. They had no leverage, right? So, it felt mostly like that group was created to save face mostly. And to satisfy people who were concerned about diversity but weren't necessarily affected by it. So, this group got frustrated over time, had less meetings, and eventually disbanded. […] I would argue it's because they had no power. If you don't have any power to do anything, it's hard to make anything change. And as a group that's been created *specifically* to create change, it feels sort of meaningless. Right? So eventually people get frustrated because they *will* try to get that power, but they're not necessarily granted it. (Ava Pek)

Another participant described at length having similar issues with getting such groups "off the ground," and then maintaining them over time—especially in the face of some pushback by non-marginalized members of the organization—saying:

> Well, we do have a women's group that we're trying to really get off the ground. And we're trying to send folks to women's conferences. And it's very women-led

> though, which is great. We have had some pushback just from dudes who were like, "Why isn't there a men one?" And in these groups, I personally would advocate for ignoring [these responses] because they're being babies [laughs], and we shouldn't have to baby them. We should be able to have this nice thing and be able to move forward with it. […] There was a lot of plans, and I don't know where those plans are at. I have not heard in a while. But there was interest. There very clearly was interest. And yeah, we got some pushback from some of the randos in the programming department, but we didn't get any pushback from the higher-ups. They were generally on board. So, at least there was *that*.

When I asked if she could elaborate about the responses of other members in this women's group, she added:

> There were others that were really concerned about making sure that nothing that we were doing made *men* feel unwelcome. And they were very concerned with that. And I don't think that—I don't think that that's necessarily completely *not* worth being concerned with. But my take was like, "Okay. Let's not say *literally* all men are evil. Let's not do that, obviously. But at the same time, we don't have to baby these people. We don't even have to talk about men at all. We can just keep doing what we're doing and have it not be a big deal, because it isn't. And the higher-ups are cool with us, so why worry?" But I mean, there were a lot of differing opinions on that. Some people were really emphatically like, "No. We gotta make sure that those men are as comfy as possible." And then there were some that were kind of in the middle like, "Okay. We should maybe do a little bit of outreach but not necessarily make it a super high priority." And then I'm firmly on the spectrum of like, "They don't matter in this." [laughs]

In response to this, I said that I was intrigued by the implications of a potential move to reconcile with such dissenting men for creating additional concerns for the group (especially in terms of extra work), and asked, "Would it have been your group doing that—advocating?" She elaborated, saying:

> Yeah. That would have been on us, and that's not necessarily great. Also, shortly after I signed on, there was a diversity initiative that they wanted to start up and they had a little sign-up sheet for people that were interested. And I actually wasn't going to join it at first, because I was like, "Well, you know. I mean, I'm sure a bunch of other people will be interested. I'm just a white lady, it's probably fine." And then I saw that, literally, nobody else had signed up for it except for a straight white dude in the office and I was like, "Okay. I need to sign up now. I want to make sure it's not just this one straight white dude on the diversity initiative. [laughs] One woman on there is better than nothing." [laughs] But

> nothing ever came of it. So, I think— And this women's group kind of feels like it's going a little bit the same way. So, I feel like we have [institutional] support in that, if we do it, it's fine. But *we* have to do it; we have to do it ourselves. Which, I mean, may not necessarily be a bad thing because we can kind of take ownership over what we're doing, but we're all at work. We all have work to do. So, it's not always easy to get that stuff planned out.

As this example highlights, supporting such inclusion-related infrastructure over the longer term will necessarily involve the support of engaged individuals. If their efforts to maintain this infrastructure are not sufficiently recognized, then this work can become a significant source of extra or invisible labor—especially for members from underrepresented groups who may feel personally invested in the continued success of this infrastructure.

6.4: Addressing Extra and Invisible Labor

As I have discussed throughout this chapter—as well as in both Chapter 4 and Chapter 5—several aspects of both organizational structure and collaborative tool use within video game design organizations can create extra and invisible labor for individual members of these organizations. While all individuals may engage in some such work at some point during their career, several participants describe the disproportionate impact that extra and invisible labor can have on members from marginalized groups.

Addressing this burden of extra and invisible labor, therefore, is critical for fully supporting the inclusion of underrepresented and marginalized groups within video game design organizations. Accordingly, in this final section, I discuss several important sub-themes that participants described in terms of their own or others' work, including: the burden of inequity of self-advocacy and mentorship, the impact of differing work expectations that are based primarily on members' appearance and/or identity, and the impact of emotional labor. Lastly, this section is not as aimed towards giving concrete recommendations (especially compared to sections 6.2 and 6.3, above) as it is focused on

surfacing these forms of labor and making them visible to other members of video game design organizations.

6.4.1: Self-Advocacy and Mentorship

An additional effect of a lack of mentors for members of underrepresented groups (as discussed in section 6.3) is that these individuals often have to work harder to be their own advocates. While members from dominant groups are more likely to have built-in, visible, and expected advocates, marginalized individuals may struggle to identify or cultivate those advocates—or may have to fill that extra role for themselves.

One participant from a large organization discussed the challenges of having to be her own educator and advocate, saying:

> [I would just like to emphasize] the struggles that I've gone through personally of trying to get to a point where I want to be. Every time I've been given a position bump, I was not given it without fighting for it. So, I had to go in, to the executive producer, and say, "I deserve this." With evidence and everything. Because I'm being told that I'm so talented or whatever, but I'm still at this bottom rung. So, I'm trying to figure out what is going wrong. And then—it's hard for me to go in and be like, "I deserve this." But it's been just a constant struggle. And I do feel like I have to work much harder as opposed to my male counterparts who can kind of skate along. I get frustrated to the point where I'm just like, "I'm out of here!" But I keep on going because I, you know, I believe in what I'm doing. Overall, I like my team, it's just [that] overall, management has been resistant to, kind of, rewarding— It seems like a prejudice, but maybe it's not. Maybe they just don't realize. I don't know. But I've never had— Like, I've talked to other—like my male counterpart designers—and they're like "Uh, I don't know. I don't have to do that." And I'm like, "I have to ask for a raise every time, I feel like, because I'm a woman?" That's ridiculous. (Katie Roberts)

Moreover, such experience with the challenges of self-advocacy can create a strong desire to mentor others (even beyond job expectations), resulting in more extra labor for members of underrepresented groups. This same participant expressed such a feeling towards providing the guidance for others that she herself never received, saying:

> So, having the support and training, which is what I've always tried to do. Anyone that was hired, I'd be like "Let me train them, I'll train them, I'll go through everything." (Katie Roberts)

Another participant discussed participating in various extracurricular activities aimed at promoting outreach to various groups interested in becoming involved in game design, including serving on a conference panel:

> A couple of years ago at South by Southwest, [our organization] had a panel on how to get into the game industry, and all but one person were women. […] So that was nice. So, everybody at South by Southwest who was like, "Yeah, I want to know how to get into the game industry," everybody asked questions of a bunch of women, which is really nice. And they thought to ask me, and that was after I transitioned publicly at work. And there was no question about it, like, "Hey, you're a lead here. Do you want to?" Because they knew that I'd done some public speaking before [and could] talk in front of people and handle it. So, they're like, "Well, maybe Rachel will be able to do this." I was like, "I'm in. Let's do it!" [laughs]. (Rachel Ripstra)

While this participant did not express such work as a burden, her participation is still likely motivated by the desire to support diversity and inclusion within the game design industry. My intention in highlighting these examples is not to say that members from underrepresented groups should not be invested in performing this kind of labor, but rather that organizations should recognize the value of this work and consider *as* a form of labor (especially if it even tangentially affects the organization).

6.4.2: Work Expectations Based on Appearance and/or Identity

Another form of extra labor that participants discussed is the assignment of work tasks based on organization members' physical appearance or other aspects of their identity—especially in relation to stereotypes about or expectations for specific marginalized groups. Accordingly, this section discusses the impact of having different expectations for individuals in the same job roles or hierarchical positions, as well as the

challenge of supporting inclusion within an organization without relying unfairly on tokenism or consulting.

6.4.2.1: Different Expectations

One significant area of inequity between marginalized and non-marginalized members is in the creation (or tacit acceptance) of different expectations for organization members holding the same job roles. For example, one participant in a tiny organization described being expected to do otherwise-undesirable tasks due to stereotypical gender expectations, saying:

> You'll be treated as the secretary sometimes; more of that administrative duty stuff, paying bills, getting organized, anything that has to do with things that's not just the production of the game. Which is very frustrating because that's all I want to be doing, too. I want to be working on the game, and I want to have that creative fulfillment, and I want to be bettering myself there. But I don't have the time to do that.

In this case, all members of this single-team organization are all of equal hierarchical status and decisions about task assignments and divisions are made collaboratively. As I discussed in Chapter 4, however, factors such as demographic differences can still impact members from underrepresented groups within such organizations.

Differing work expectations can also affect the generation of game content within an organization. Several participants discussed an expectation within their organization (often without explicit consultation with the participant) for them to create specific content based on presentation of their appearance or identity. One participant in a large organization discussed how she became involved with the creation of a specific game elements based primarily on her identity, saying:

> I was asked to design something because of the way I look, and because I'm a woman, which was [a rainbow-related costume]. Which—I was super excited about and that's one of our highest selling things. […] The only reason I was

> included in [another] section was because I—there was—it was also including, like, the appearance changes and I like designing hair. I normally have crazy-colored hair. So, they were like "aaaahhhh." (Katie Roberts)

These examples highlight the challenges—and potential rewards—of being singled out as part of an underrepresented group within the organization. While this participant did not express a strong degree of offense at being asked to do these tasks, other such "asks" for members of underrepresented and marginalized groups are clearly offensive—especially when such members' work and opinions are not being fairly valued.

6.4.2.2: "Consulting" and Tokenism

The practice of consulting with "representatives" of a cultural or racial/ethnic group does not necessarily improve either inclusion within an organization or diversity within a video game.[53] One participant described having previously been asked to evaluate the cultural aspects of a game based on his racial or ethnic identity—and then being summarily ignored. He discussed the effects of this task at length, saying:

> I was helping a very small team that was creating a startup and the lead designer was a very strong-minded individual and he wanted to do an Asian-themed game. And *I* think that *he* thought that I would be his Asian guy in his pocket [and] to give insight on what Asian things are. And, yeah, it was frustrating because you can explain to certain individuals what their misconceptions are, [long pause] but sometimes, it just doesn't change their minds. And it's hard enough to make a really good game experience. It's hard enough to make a fun game without all those cultural considerations, but once you introduce any factor that may potentially offend an audience, you're really putting it at a disadvantage.
>
> I have hours and hours of thoughts on that whole dynamic [of asking] people to be cultural representatives. People's willingness to listen when they do ask others. Why they don't. Why they would assume that their highly-subjective opinion or misinformed notions of what a culture is should trump what someone is saying. And like that weird conflict that can exist when like, ''Well he may be telling me

[53] For example, the use of "consulting" to superficially legitimate non-Indigenous people's use of Indigenous peoples' cultural knowledge (whether or not the consultants actually support the decisions made or actions taken) has a long history, including in institutions such as museums and archives (Ogden, 2004, p. 97).

> what is or isn't proper in the culture, but I'm the boss and I'm the game designer of this game and this is my vision.'' How do those things resolve themselves? And the assumptions that— Maybe in the last four or five years, I feel like I'm fighting against when it comes to assumptions that come with my ethnicity and where my role would be in a conversation as a result. […] But the assumption of passivity for the Asian male. I feel like I've been coming—I mean, I don't know if I was willfully ignoring it, but—I feel like I've been coming up against it a lot more lately. (Thomas Jung)

When I asked in more detail about the effects of this treatment, he elaborated:

> There is a certain point where you just have to look at somebody, say, ''I know you're not listening to me. But there's nothing I can do about it." […] It is very, very frustrating. It's especially frustrating when somebody will look at you and say, "You're being ridiculous." I had this conversation with a female colleague. And she put her hand on my hand. And looked me right in the eye. And she said, "Welcome. To being a woman." [laughs] Yeah. And I can't argue with that. […] But it was validating—to me, anyway—because there's always a moment where you doubt, like, "Is it just in my head? Am I making a bigger deal out of this than I should be?" And then to have somebody else to say, "No. No, you're absolutely right." (Thomas Jung)

In addition to being unfairly asked to do certain work (which was then not recognized) based on his identity, this participant elucidates the cumulative effect of being expected to conform to certain stereotypes without complaint.

Additionally, the burden of expectations for members from underrepresented or marginalized groups to provide extra (or different) work due to their identity is especially problematic when an individual may find themselves becoming the single "token" representative of an entire group—in terms of demographics within the organization and/or as an ideological representative during game design. Several participants in quotations discussed above (especially in section 6.1) mentioned the pressures that can come with being the "only" member (or "the unicorn") of a marginalized group—including creating the pressure to leave an organization. One participant specifically described the burden (and the offensiveness) of being asked to represent an entire identity group, saying:

> Everyone expects a diverse person to have all of the opinions and all of the correct answers on everything, but that's not how that works. You cannot pick a single person who lives in America to consult on what Americans think. It'd be very difficult to do that. I recommend you hire an anthropologist. [laughs]. You can't just pick out some random diverse person and be like, "What do you think we should do about our diversity problem?" And I'd be like, "Gee. I don't know. How about you talk to multiple people about it?" But yeah, you can't expect one person to answer all your problems. (Ava Pek)

This example again highlights some of the difficulties in expecting a single individual to act as a "consultant" for an entire group.

Such concerns about relying on tokenism or consultants may seem to run counter to some of my earlier discussion (especially in section 6.1.3) about the importance and the possibility of including diverse members within an organization, including bringing such members in specifically to provide input on how to handle diversity within game content. For example, one participant discussed refusing to work on a game featuring a character from a demographic group that was not represented in the organization (and argued that such a member should accordingly be hired specifically to work on this project) and another participant discussed an interest in adding another member to a tiny organization in order to bring both demographic diversity and a specialized, diversity-focused skillset. Accordingly, it is critical to consider the effects of decisions to improve diversity or inclusion simply by adding a single member to the team.

There are some potential differences between these cases and the examples discussed in this section, however. The participants discussed in this section do not seem to feel that such "consulting" is an explicit and compensated task that is part of their job—especially when compared to others in the same job role. For example, one participant emphasized "pick[ing] out some random diverse person" to perform such tasks and another emphasized being "treated like the secretary" when they were not, in fact, a secretary in role name or official task assignment. Additionally, these examples

indicate that the final outcome of "people's willingness to listen when they do ask others" to perform such tasks should also be considered. In theory, therefore, individuals hired with the clear and explicit expectation to perform such diversity- or inclusion-related tasks—who explicitly agree to do those tasks and whose work and opinions are valued and implemented—can work meaningfully within an organization.

Generally, however, neither waiting until the end of a project to incorporate members from underrepresented backgrounds nor asking a single member to speak as a representative of entire demographic(s) is an equitable approach to incorporating diversity into a project—and to do both would be even worse. Likewise, it is important to consider the equity of team members from underrepresented backgrounds in terms of both the kinds of tasks and the number of tasks that they are being asked to complete, particularly in comparison to non-marginalized members. These examples also illustrate the burden on members from marginalized groups to manage (and conform) to the expectations and perceptions of non-marginalized members, thereby additionally creating extra emotional labor for these individuals.

6.4.3: Emotional Labor

Finally, participants discussed several different forms of emotional labor that members from underrepresented and marginalized groups may disproportionately need to perform. On a personal level, one area in which members from such groups engage in emotional labor is in the need to engage in ongoing self-talk that supports a sense of belonging. One participant, for example, described such labor in terms of the need for mentors to provide an outside perspective (as discussed in section 6.3) and in combatting an internalized sense of inferiority.

This kind of emotional labor is particularly important for members from underrepresented groups because they can face feelings of inadequacy not only within their own organization, but within the gaming culture more generally. Although this problem is not new, the (fairly recent) events of Gamergate have left many members of the industry thinking more concretely about such issues. In total, 5 participants mentioned "Gamergate" directly and at least another 6 referred to it perhaps indirectly in terms of "toxic culture" or policing of gamer and game-maker identities. One participant discussed at length the effect that Gamergate had had on his personal work and interpersonal relationships, saying:

> Okay. I mean, I remember whenever that whole just God-awful fiasco of Gamergate started rolling out, and what a shit-show that was. And I know I lost friends over that. Some people just really showed their true colors, too. People who I've known for years and were just— It was like someone flipped a switch in their head and they just flipped out. That was challenging. That was *really* challenging, because it also had me even question some of my own ideas and ways that I hadn't really examined my career or the games that *I've* worked on. And it's something that I kind of came to a conclusion later on, where I realized that it's a lot easier to critique oneself and accept the flaws and try to change than it is to dig in your heels and try and preserve a world that's changing. It's, "How much effort are you willing to spend to make another person's life hard, just because *you* don't think they should have an easy life?" I mean, you get into really weird, nebulous territory of like, "What are motivations? Why would somebody do this? Is it just because hurting someone else is funny?" Like, where's the end to that joke? Where does it stop? And if it really is just about you and the art that you want to create, then why do you speak up so vociferously about other people who create different art? When does it stop becoming the personal and starts becoming the political?
>
> And to me, there was a lot of a lack of self-critique and analysis that went on with a lot of folks who immediately knee-jerked to the reaction of being told that "there might be problems with something you created." And I think that's probably a symptom of kind of the creative mindset, though, too—is that the thing you created is a gift to the world, and "how dare you challenge it? I made this for you." And it's like, well, no, you made it for me, but you didn't really make it for *me*. […] It was like you made something that *you* thought was really cool, that you hoped *I* would also think was cool. And here I am telling you that it *is* cool,

> but I would like to see something different too. […] The way that they reacted was— I mean, at the time, it was [that] people were beginning to talk about a lack of inclusion in games, [about] the way that women in the industry were being treated, [and how] women in the fandom were being treated. [And] you know, the presence of women in games as largely sex objects and that was about it. And a lot of very fragile male egos broke that day.
>
> And I think it was very, very surprising to me. Some of these people who I'd worked with—who I thought were generally on the up-and-up—just retreated and their fragility became very apparent. And it just flat out broke some of them and they just started repeating the most reactionary trash you could ever imagine. I mean, I can't cite a specific example, but it was just kind of the greater experience.

I include this lengthy example in order to fully illustrate the impact that Gamergate had both on this particular participant and on several other participants who did not self-identify as being part of an underrepresented group. While this participant was likely already supportive of diversity more generally within the game design industry, this moment offered an opportunity to more critically engage with his beliefs and to think more concretely about actions that he could take in order to accomplish his goals around inclusion. Notably, this participant did not describe relying on members of marginalized groups within his organization to engage with him in that critical self-reflection process—which can be another form of interpersonal emotional labor for members from underrepresented and marginalized groups.

Additionally, on an interpersonal level, members from underrepresented groups may find themselves engaging in unrecognized emotional labor to manage the negative emotions or experiences of others in the group. One participant discussed having had to do this kind of emotional management in several organizations, saying:

> There hasn't been much pushback for [men] to be more socially aware and more responsible for those sorts of things, and that also contributes to men acting like babies. There are a lot of guys in the gaming field that have power fantasies. Even if they don't have power fantasies, they want to be rewarded for everything and congratulated for everything, and they put all of the emotional load onto someone

> else—If there is a girl in the workforce, that is hers, whether they realize they're doing it or not. […] The emotional labor having to deal with [men's] fits and their breakdowns, as well as them not wanting to do certain things in the project because, whether they know it or not, I think they might believe that it's beneath them to do that sort of work.

She additionally described having to mediate the expectations and emotions of different members of her organization, saying:

> And currently, we're sort of at the drawing board in that we're not sure how to handle it at this point. And it's more of our focus to get the game done, rather than putting too much energy into how to handle this person. And then it affects [another] member, because it's then more stress for him and he gets some of the emotional labor and baggage, as well. And round and round. […] And then that'll—oh, [it's] stacks and stacks of emotional labor—because then I have to talk to the other guy and say, like, "Okay. Let's talk about all the things that didn't go right today. Do you want to vent about it? Do you want to talk about where you want to go with the project?" So, it's beyond full-time work just keeping a studio together.

While such interpersonal emotional labor can happen in any size of organization, it may be potentially particularly challenging to address in small groups with a supposedly "flat" structure of equals.

Finally, this form of extra or invisible labor can also affect the creation of game content, as members of underrepresented or marginalized groups may feel an extra investment in advancing diverse representation within the games they are working on. One participant described such an example, saying:

> And I think there came a moment where I asked, "We're clearly trying to be inclusive, but I've never seen a gay character in [such a] game." Like a gay male character. Why is that? And I think it was a moment where no one had a good answer for me. And if I'm honest, I feel kind of—because it's a bunch of straight men writing these sorts of characters and I think they're probably more comfortable with the lesbian character than the gay male character. So, I don't know. I think that was one of those moments for me. […] I'm not straight myself, so I felt like I could speak from a position of authority on the subject and saying that it wasn't really inclusive to leave something like that out when they had worked so hard to be inclusive from every other angle. […] I mean, so they weren't hostile towards the idea. It was just more of a, like, "We didn't think

> about that," sort of moment. And I think moving forward, it was one thing that I asked for was, "As we're looking to create new characters, I know you guys want to be inclusive and this is an area that we have traditionally lacked in. So, I would like to see that addressed." And I think it was well received. (Ricky Llamas)

At least 2 other participants additionally described becoming invested in supporting the diversity of a game along a specific aspect that was personally relevant to them or their identity. As with the "burden" of personal investment in inclusive mentorship, this form of emotional labor is not inherently bad—in fact, in most of the cases described, it actually resulted in more diverse game content. It is important for organizations to acknowledge, however, that such investment may not be equitably distributed among members.

Accordingly, recognizing—and then working to address—the extra and invisible labor of members from marginalized groups is the final important aspect of promoting the inclusion of these groups. As with all of the recommendations from sections 6.2 and 6.3, members must *continually* work towards this goal in order to both recruit and retain members from underrepresented and marginalized groups. Only when such members truly feel like equally valued members (who are allowed to bring their full self into the work process and work environment), can collaborative video game design organizations fully support diversity in relation to both organizational structure and tool selection and use.

CHAPTER SUMMARY

In this chapter, I discussed the findings related to my last research question while building on and extending the findings in Chapters 4 and 5. I first discussed how participants described "diversity," particularly in terms of the demographics and identities of themselves and other members of their organizations. While I deliberately left some flexibility for participants to interpret and discuss "diversity" on their own

terms, all participants focused their discussions at some point around demographic and identity groups that are considered to be underrepresented within the field of video game design.

All participants asserted that it was "important" for video game design organizations to support "members from diverse backgrounds, identities, perspectives, and experiences." In elaborating on why they felt that this support was so important, participants almost exclusively discussed one (or both) of two themes: a need for equality in society and/or the workforce, and a need for better and more diverse games. Altogether, 14 participants discussed the impact that support for diverse members could have on the development of better and/or more diverse video games at length, although many participants touched on both themes in their discussion. (And all participants at least briefly referred to a link between diverse team members and creating more diverse games at some point during their interview.)

One prominent theme that participants discussed across all significant structural features related to organizational size is the importance of having diverse individuals in diverse positions within their own organizations—and video game design organizations more generally. Participants discussed this diversity both in terms of different job roles within the organization and differing levels of hierarchical position or responsibility. As I touched on several times during my discussion of salient structural features in Chapter 4, participants across all organization sizes discussed how some aspects of diversity interact with each structural feature (size, task division and allocation, coordination, decision making, and recruitment and hiring). Participants additionally discussed the importance that any single member may have during the design process. At one time or another, therefore, every single role within an organization will become necessary for completing

the project. Accordingly, each role provides an opportunity to introduce diversity within the organization—in terms of personnel, game content, or both.

I also discussed how equity between members from marginalized and non-marginalized groups is accordingly also related to equity in responsibility or hierarchical position with the organization. In total, 8 participants discussed the significance of having diverse members—especially members from underrepresented or marginalized groups—at varying levels of hierarchical position or responsibility within their organization. Most participants expressed some degree of concern or skepticism about the degree to which their organization has integrated diverse members into different hierarchical levels within the organization—especially within the highest levels. A few participants discussed potential reasons for the lack of diversity within the higher levels of their organizations, including a lack of cultural support for members from underrepresented groups and a lack of visible diversity within the upper levels of an organization.

Participants also discussed how a lack of diverse representation in lead positions and decision-making roles specifically affects diverse content and representation in games, as well as affecting diversity in work teams. In total, 10 participants discussed how having (or not having) members from diverse backgrounds and/or identities had directly affected diversity within a game that their organization was developing. Several participants discussed instances where they had felt some concern that they (or their team) might not be fully equipped to depict certain identities or others' experiences. Additionally, a few participants discussed in detail the impact that key members of an organization—especially members at the highest levels of the organization—can have in shaping diverse content within a game. In order to get diverse members into diverse positions throughout an organization, however, organizations must first *have* diverse members. Once again, key decision-makers directly impact the processes of recruitment

and hiring within participants' organizations—especially the hiring of members from underrepresented and marginalized groups. Unfortunately, many participants in these positions discussed finding themselves within what I have named "the hiring conundrum."

I accordingly next discussed the second prominent theme that synthesizes participants' discussions of diversity in relation to organization structure: a fundamental conundrum related to hiring diverse members. While nearly all participants discussed the hiring process as an important vector for shaping the diversity of an organization, many of these same individuals discussed feeling that there were challenging aspects to accomplishing this goal that they were unable to either fully understand and/or overcome. The first challenge that participants discussed is feeling that there is a lack of candidates from underrepresented and marginalized backgrounds for their organization to hire from, while the second challenge involves getting diverse applicants (especially from underrepresented groups) to actually choose to work with their particular organization. Even members with some degree of authority and agency in the hiring process often struggle to completely think through or address the reasons for being unable to successfully hire more diverse individuals into their organization. Additionally, on the other end of the hiring process is the processes by which members *leave* organizations that they have been hired into. Participants discussed several reasons (or potential reasons) for leaving an organization, including: the challenges of being the "first" member of an underrepresented group, being repeatedly overlooked for positions with more responsibility and authority, sexual harassment issues, and being frustrated with the culture of the game industry—especially in terms of a lack of diversity.

In order to address these challenges related to placing diverse members in diverse positions, I next turned to discussing key themes that synthesized participants' direct

discussions of and recommendations for promoting the inclusion of underrepresented and marginalized groups within video game design organizations. The first theme of recommendations that I discussed relates directly to overcoming the hiring conundrum in order to place diverse people in diverse positions within an organization: expanding and diversifying the network(s) of connections. I divided participants' suggestions into 3 areas of strategies that target different phases within the recruitment and hiring process, including: before organizations/individuals need to hire, when organizations/individuals are actively trying to hire diverse members, and as organizations/individuals are trying to maintain and support diverse hiring over the long term.

Several participants emphasized the importance of working to expand an individual's network of personal connections and potential collaborators well in advance of needing to hire for any specific diversity- or inclusion-related reason—or even just to hire new members more generally. Some strategies for this phase include using social media as an opportunity to seek out diverse voices and individuals within the game design industry from different backgrounds and regularly attending events that allow game designers to meet others from different backgrounds. This practice additionally expands individuals' networks through extending their degree of proximity, including both geographic proximity (the "who's around" factor) and even potentially developing new friendships. As with extending the network through social media and other online approaches, this approach can support inclusion within organizations of all sizes.

Participants discussed several different ways in which organizations can continue to expand the network of potential members during the recruitment and hiring processes in terms of three main themes of recommendations: expanding the search, expanding the qualifications by which potential members are evaluated, and expanding the diversity of interviewers and their methods. Several participants strongly discouraged the practice of

only considering people that you personally know (especially close friends), while other participants additionally emphasized the importance of going beyond "two degrees of separation" in recruiting potential members. In addition to emphasizing the importance of expanding where and how potential members are recruited, participants also discussed the significance of expanding the qualifications by which these candidates are judged. Some alternatives to using a formalized checklist of qualification include evaluating a candidate based on a demonstration of related skills (such as assigning candidates tasks that would be part of the actual position under consideration) and recruiting new members from underrepresented backgrounds with the specific intention to give them on-the-job training. Finally, participants discussed the importance of avoiding using any qualifications that could be related to evaluating the "cultural fit" of potential members.

Both individuals and organizations can accordingly go a long way towards promoting the inclusion of underrepresented groups by expanding the search for potential candidates, addressing the qualifications that candidates are evaluated by, and considering the interviewers (and their protocols) that are assessing diverse candidates. Even if this recruitment process successfully results in increasing the proportion of diverse people in diverse positions within an organization, however, the impetus to expand and diversify a network(s) of current and potential collaborators still remains. In addition to the efforts of individuals, organizations may be able to provide additional structure towards supporting greater network expansion through activities such as sponsoring internal diversity-related events and visits to external sites as learning activities. Finally, organizations of different sizes can also challenge themselves and their members to think more creatively about how they might help to expand the network for everyone. One participant, for example, discussed actively working to use even a tiny-

small organization as potential platform to lift people from underrepresented groups into the industry and to diversify the network as a whole.

Promoting the inclusion of traditionally underrepresented and marginalized groups within game design organizations, however, is not as simple as just hiring and placing more individuals in different positions. Accordingly, I next discussed specific recommendations for keeping individuals from such groups involved within their organization as valued, equal, and engaged members—starting with the importance of visibly and actively supporting members from underrepresented groups in their daily work within video game design organizations. I divided these strategies into three themes, including: the role(s) that individual members—particularly, but not exclusively, non-marginalized members—can play in supporting inclusion within their everyday work; the importance of accountable mentors and champions for supporting and advancing members from underrepresented groups; the necessity of sympathetic and engaged decision makers, and the impact of inclusion-related organizational infrastructure.

Several participants directly addressed the role—and the corresponding responsibility—that individual non-marginalized members could have in supporting the inclusion of underrepresented groups within organizations of different structural features, particularly in the key areas of listening to marginalized members and being receptive to their feedback; speaking up in response to a problem with inclusion; and being supportive of tool selection and use decisions that may affect the inclusion of diverse members. Participants discussed how listening to members from underrepresented groups can potentially not only improve *their* experiences within the organization, but can also enhance the life and creative work of the listener. Additionally, participants expressed that, while speaking up to criticize non-inclusive behaviors could be potentially

uncomfortable, the effort was still critical to promoting inclusion. Speaking up to support members from marginalized groups can have a significant impact both for individuals and for organizations and can be done by members from organizations of all sizes and different structural features. Finally, a few participants emphasized the importance of adapting the selection and use of collaborative tools to accommodate members from diverse backgrounds. One of the best ways to support listening and being receptive, speaking about inequity and inclusion issues, and adapting tool selection and use is for individual members (especially influential members) to successfully model these behaviors.

Accordingly, I next discussed how organizations can promote the inclusion of members from underrepresented backgrounds through supporting accountable members and champions. In total, 6 participants discussed the importance of mentorship for developing important skills and/or helping organization members to advance their careers. While mentorship can play a significant role in developing the developing the career of all individuals in game design (across all job roles), it is especially valuable for promoting the inclusion of members from underrepresented and marginalized groups as it can partially counteract social and structural factors that work against marginalized members within an organization—including the fact that non-marginalized members are significantly more likely to benefit from both tacit and explicit support. The traditional role of mentors in many organizations, however, is more focused specifically on cultivating newer members' skills and their familiarity with the organization—and thus may not encompass this kind of active advocacy for members from underrepresented groups. Accordingly, one participant in a very large organization discussed his preference for using the term "champion" to specify this more active role, as it captures a greater sense of responsibility involved in the relationship. Additionally, organizations should

ensure that mentors and champions are held accountable (and are recognized) for performing this role, which usually involves extra work. Finally, members from underrepresented groups should not exclusively be asked to take on these roles.

After discussing the importance of individual mentors and champions, I next addressed the significance of sympathetic and engaged decision makers. As a basic first step, organization members need to have the desire to support diversity. As indicated by the level of importance that they place on supporting diversity and diverse individuals (discussed in section 6.1 of this chapter), all participants in this study have expressed such an interest. In addition to this desire, however, members must feel that they actually have the agency within their organization to affect meaningful decisions that are related to diversity and inclusion. In contrast to members who are sympathetic to increasing diversity and/or inclusion but lack the agency to affect key decisions, sympathetic decision-makers are not always proactive about using their agency. Decision makers must accordingly be both sympathetic and engaged in order to successfully promote diversity and inclusion within their organization. Such decision makers may be present in organizations with a variety of features (including those that employ centralized decision-making, those that use a rotating leadership model, and those that make decisions through consensus). Additionally, another key feature of sympathetic and engaged decision makers is they not get defensive about making mistakes.

In contrast, organization members who are deeply engaged (that is, individuals who express a strong passion for promoting diversity and inclusion within the organization, and proactively consider how to do so) but feel that they lack agency will often either leave an organization entirely or will "check out" of the creative process—even (or perhaps particularly) in situations where diversity-related issues have become significant. In order to avoid such "nightmare scenario" of such members checking out,

sympathetic and engaged decision makers should additionally work to identify, prevent, and diffuse such situations. Several participants additionally discussed the importance of organizations putting in place some kind of infrastructure to support diversity and/or promote inclusion that is larger than simply making individual members responsible for these goals. These forms of more institutionally-oriented support, however must be also be actively and visibly supported by the organization. One participant emphasized that even well-intentioned efforts to promote inclusion within an organization are meaningless if they are also powerless. Additionally, supporting such inclusion-related infrastructure over the longer term will necessarily involve the support of engaged individuals; if their efforts to maintain this infrastructure are not sufficiently recognized, then this work can become a significant source of extra or invisible labor.

In the final section of this chapter, therefore, I discussed the importance of addressing the burden of extra and invisible labor for fully supporting the inclusion of underrepresented and marginalized groups within video game design organizations. I discussed several themes that participants described in terms of their own or others' work, including: the burden of inequity of self-advocacy and mentorship, the impact of differing work expectations that are based primarily on members' appearance and/or identity, and the impact of emotional labor. While members from dominant groups are more likely to have built-in, visible, and expected advocates, marginalized individuals may struggle to identify or cultivate those advocates—or may have to fill that extra role for themselves. Moreover, such experience with the challenges of self-advocacy can create a strong desire to mentor others (even beyond job expectations), resulting in more extra labor for members of underrepresented groups.

Another form of extra labor that participants discussed is the assignment of work tasks based on organization members' physical appearance or other aspects of their

identity—especially in relation to stereotypes about or expectations for specific marginalized groups. One significant such area of inequity between marginalized and non-marginalized members is in the creation (or tacit acceptance) of different expectations for organization members holding the same job roles. Differing work expectations can also affect the generation of game content within an organization and several participants discussed an expectation within their organization (often without explicit consultation with the participant) for them to create specific content based on presentation of their appearance or identity. For example, one participant described having previously been asked to evaluate the cultural aspects of a game based on his racial or ethnic identity—and then being summarily ignored. In addition to being unfairly asked to do certain work (which was then not recognized) based on his identity, this participant elucidated the cumulative effect of being expected to conform to certain stereotypes without complaint.

Participants also discussed several different forms of emotional labor that members from underrepresented and marginalized groups may disproportionately need to perform. On a personal level, one area in which members from such groups engage in emotional labor is in the need to engage in ongoing self-talk that supports a sense of belonging. This kind of emotional labor is particularly important for members from underrepresented groups because they can face feelings of being inadequate not only within their own organization, but within the gaming culture more generally. Although this problem is not new, the (fairly recent) events of Gamergate have left many members of the industry thinking more concretely about such issues. In total, 5 participants mentioned “Gamergate” directly and at least another 6 referred to it perhaps indirectly in terms of “toxic culture” or policing of gamer and game-maker identities. Additionally, on an interpersonal level, members from underrepresented groups may find themselves

engaging in unrecognized emotional labor to manage the negative emotions or experiences of others in the group.

Finally, this form of extra or invisible labor can also affect the creation of game content, as members of underrepresented or marginalized groups may feel an extra investment in advancing diverse representation within the games they are working on. As with the "burden" of personal investment in inclusive mentorship, this form of emotional labor is not inherently bad—in fact, in most of the cases described, it actually resulted in more diverse game content. It is important for organizations to acknowledge, however, that such investment may not be equitably distributed among members. Accordingly, recognizing—and then working to address—the extra and invisible labor of members from marginalized groups is the final important aspect of promoting the inclusion of these groups.

All members of an organization must therefore *continually* work to support inclusion in order to both recruit and retain members from underrepresented and marginalized groups. Only when such members truly feel like equally valued members (who are allowed to bring their full self into the work process and work environment), can collaborative video game design organizations fully support diversity in relation to both organizational structure and tool selection and use. Therefore, while the recommendations in this chapter are a valuable starting point for promoting the inclusion of underrepresented and marginalized groups within video game design organizations, they are not exhaustive—and they should not be considered more valuable than listening to and engaging with such members within your own organization.

In the next chapter, I synthesize some of the overarching themes of my findings related to all three research questions and discuss how these findings enhance our understanding of the relationship of diversity to collaborative video game design.

Chapter 7: Discussion

In this chapter, I synthesize overarching themes that address my findings from multiple research questions. I additionally return to the literature that I discussed in Chapter 2 in order to show how this research enhances our understanding of the relationship of diversity to collaborative video game design work. Finally, I conclude by discussing some of the limitations of this study.

In order to frame participants' discussions of supporting diverse members within the collaborative design process, however, we must frame how individuals understand and discuss diversity in the context of this work.

7.1: Understanding and Discussing Diversity in the Context of Video Game Design Work

As I discussed in Chapter 1, I initially approached this research with an expansive understanding of diversity within both a more structural and a more individual perspective, while being sensitive to how mixtures of diverse identities and perspectives will both impact and be impacted by the work done in an organization. Previous research has examined, for example: how concepts of "otherness" may be psychological, philosophical and/or ontological, political, or cultural (Miller, 2008); and how diversity may be understood through concepts such diverse perspectives, diverse interpretations, diverse heuristics, and diverse predictive models (Page, 2007). Additionally, other scholars have called for critical diversity research that reassesses common *a priori* assumptions about diverse identities in order to open up this area of research "for explorations beyond conventional identity theorizations," but that also strongly discourages giving primacy to the concept of oppression while doing so (Marfelt, 2016, p. 31).

As I discussed in Chapter 6, the majority of the forms of diversity that participants discussed, however, revolve specifically around demographic and identity groups that are considered to be underrepresented within the field of video game design. This understanding of diversity in terms of demographic identity groups (based on markers such as race, gender, class, disability status, sexual orientation or identity, age, and ethnicity) is in line with previous research that has conceptualized diversity in these terms (Wood, 2003). Accordingly, this understanding of diversity is perfectly appropriate for the nature of this research and the methods that I have employed. I still contend that we should also consider some of the more abstract frameworks for conceptualizing diversity together with operationalized definitions of diversity found within the workplace by acknowledging the tension between these two approaches—a tension that mirrors the one between structure and agency. Participants' experiences indicate, however, that applying these more abstract understandings within the field of video game design is likely a future goal that can only be achieved after—or at least concurrently with—addressing work inequalities based on demographic identity groups around markers such as gender, race, religion, and sexuality.

This section, therefore, discusses significant areas in which this study relates to previous research on supporting members from underrepresented and marginalized groups within the workforce, particularly within the field of video game design. First, however, I briefly discuss how the context of Gamergate likely shapes participants' understandings of diversity specifically within the field of collaborative video game design.

7.1.1: A Post-Gamergate Landscape

The harassment campaign known broadly as "Gamergate" undoubtedly frames participants' discussions around diversity within their field. Although the problem of identity-policing within the communities of both game players and game designers has existed for a long time, the (fairly recent) events of Gamergate have left many members of the industry thinking more concretely about such issues. While I did not mention Gamergate myself at any point during recruitment or interviewing, 5 participants mentioned "Gamergate" directly and at least another 6 referred to it perhaps indirectly in terms of "toxic culture" or the policing of gamer and game-maker identities.

Some excellent critical writing and research has been recently published that directly confronts the sexism, racism, homophobia, transphobia, xenophobia, and ableism that Gamergate came to represent within gaming and the game design industry (Bezio, 2018; Chatzakou et al., 2017; Evans & Janish, 2015; Mortensen, 2018), particularly as written from the perspectives of marginalized and underrepresented members of these communities (DePass, 2018; Gray & Leonard, 2018; Hepler, 2016). Very little of this previous research, however, has focused on conducting a strategic look at specific factors within the everyday process of collaborative video game design work that might better support inclusion within the field in the post-Gamergate landscape.

Accordingly, this study enhances our understanding of the effects that both outright discrimination and extra emotional labor continue to have on members from underrepresented groups as they face challenges to their presence not only within their own organization, but within the gaming culture more generally. Perhaps because these challenges were only magnified by Gamergate (and were not entirely new to groups who had already been facing such discrimination), however, very few of the participants who self-identified as being part of a marginalized groups actually discussed Gamergate in the

context of their own experience. In Chapter 6, I discussed a lengthy example from a participant who did not self-identify as being part of an underrepresented group in order to fully illustrate the impact that Gamergate has had both on this particular participant and on several other such participants. While such individuals were likely already supportive of diversity more generally within the game design industry, the flashpoint moment of Gamergate has offered them an opportunity to more critically engage with these beliefs and to think more concretely about actions that they could take in order to better support inclusion. Perhaps more significantly, therefore, this research additionally highlights how such sympathetic members from non-marginalized groups can become more proactively engaged in promoting inclusion within the post-gamergate landscape.

Finally, I additionally hope that bringing greater attention to considering diversity within this field will better support underrepresented individuals working within the field and potentially inspire other diverse individuals to join the field, which is a need that many previous researchers and practitioners have identified (Cunningham, 2016; DePass, 2018; Hepler, 2016; Johnson, 2013). This research therefore also builds on previous work that has highlighted personal stories from members of marginalized groups about working in the video game design field, including instances of personal success, creative achievement, and even organizational change (DePass, 2018; Hepler, 2016). Although many participants from underrepresented and marginalized groups described having to face obstacles within the field due to their identity, many of them have been able to enact moments of transformation and agency within their work organizations—whether by speaking to managers about increasing diversity within a game, or by eventually becoming a team lead or studio head themselves. Accordingly, by highlighting and amplifying these participants' experiences, this research emphasizes the positive impacts

that individual members from underrepresented or marginalized groups can have within their organizations and within the field more broadly.

7.1.2: Broadening Participation Within the Video Game Design Workforce

Although there has not been much research into broadening the participation of underrepresented and marginalized groups within the field of video game design, previous research has considered this issue within the STEM and information technology fields more broadly. For example, much of the current literature on broadening diverse participation within the STEM disciplines considers the educational model to be a crucial part of shaping diversity within the STEM workforce (Aspray, 2016a). While a lack of demographic diversity within the educational system is undeniably a critical factor for diversity within those work fields, underrepresented and marginalized groups are failed by the educational "pipeline" through a lack of diversity in other, more subtle, ways (Barjaktarovic, 2014).

Participants in this study discussed how the lack of demographic diversity within the video game design industry is related to the educational pipeline in several ways, especially in relation to the hiring conundrum. In chapter 6, I discussed several recommendations that participants made for overcoming the so-called pipeline issues, for example, around expanding the types of educational qualifications considered within the industry and recruiting from diverse types of educational institutions (such as community colleges, Historically Black Colleges and Universities, Hispanic-Serving Institutions, and Tribal Colleges and Universities). In addition to emphasizing the importance of expanding where and how potential members are recruited, participants also discussed the significance of expanding the qualifications by which these candidates are judged, including: avoiding standard "checklists" that can disadvantage applicants from

underrepresented backgrounds; eschewing the shorthand of relying on formal educational degrees and achievements as a way to filter out unconventional applicants; and avoiding using any qualifications that could be related to evaluating the "cultural fit" of potential members.

Other participants suggested that video game design organizations should take a more active role in supporting diversity within educational programs themselves. While nearly all participants discussed acquiring their relevant skills through independent self-study or through working on hobby projects, several participants expressed concern that current formal educational models (and the qualifications associated with those models) might be excluding potential designers from underrepresented and marginalized backgrounds. The need to balance ongoing self-education with following a (at least somewhat) recognized path to skill acquisition may be especially true in regard to learning about collaborative tool selection and use. Encouraging organizations to sponsor both formal and informal tool skill developments programs, therefore, might be one approach both to supplementing self-directed learning and to facilitating some normalization of skills for individuals who might otherwise lack access to these technologies. This study accordingly extends previous research on the role of the educational pipeline in broadening participation within STEM and IT fields by illuminating a similar relationship within the field of video game design.

Additionally, previous work on broadening participation within STEM and IT fields has discussion a number of different factors that negatively impact the inclusion of members from underrepresented groups once they enter the workplace. Some such issues include: how relationships and network connections within organizations shape very different consequences (such as work roles and promotion opportunities) for group members based on factors such as gender, race, or national identity (e.g., Chen, Tan, &

Tu, 2015; Thébaud, 2015); members from underrepresented groups facing feelings of alienation or of being ignored—or even outright insulted—within their work teams (DePass, 2018; Misa, 2010); and members from underrepresented groups struggling to get their ideas and work recognized unless they are at a high level within their organization (Cunningham, 2016; DePass, 2018; Hepler, 2016). Participants in this research similarly discussed all three of these factors in relation to the experiences of underrepresented and marginalized groups specifically within the field of game design.

Finally, this research extends previous work that has considered such struggles for inclusion within the STEM and IT workforces within the context of stereotypes within these fields. Previous research has shown that negative stereotypes of underrepresented groups affect individuals on both a personal (Latu et al., 2015) and a collective (Cohen & Garcia, 2005) level, and that negative stereotypes can affect the long-term career development of members of underrepresented groups (e.g., van Veelen, Derks, & Endedijk, 2019). As I discussed in Chapter 6, participants in this study described similar experiences related both to the work tasks that they were given and to a difficulty in getting that work recognized. In response to such negative personal experiences with discrimination and stereotyping, multiple participants who self-identify as members of an underrepresented or marginalized group discussed being "more intent on pursuing employment with organizations deemed to value diversity because they feel that their salient identities are likely to be affirmed" (Avery et al., 2013, p. 175).

With this new understanding of how members of video game design organizations understand and discuss diversity within their workplace—especially in the context of broader discussions around the concept of diversity and broadening participation in the STEM and IT workforces—we can better understand how to support diverse collaboration specifically within the field of video game design.

7.2: Supporting Diverse Collaboration in Video Game Design Organizations

As I discussed in Chapter 2, this is (to my knowledge) the first in-depth study that has focused specifically on the day-to-day experiences of people working within different video game design organizations—particularly while considering the relationship of diversity to this work. This research accordingly looks directly at how the "actual work of games development is accomplished" (Koleva et al., 2015, p. 149) from the perspective of individuals working in range of different job roles at organizations with different structural features.

These diverse participants all strongly empathized the collaborative nature of their daily video game design work and described working collaboratively with not only other members within the same job role, but with members across different roles. While participants' overwhelming discussion of the importance of meaningful collaboration in video game design work is likely partly due to the way this study was framed, this emphasis confirms the need for research into this area. Additionally, participants' discussions of working with members across different job roles indicates that it is vital that members from a variety of roles be included in any research into this area.

This section, therefore, discusses significant areas in which this study relates to previous research on how collaborative work is done within different video game design organizations. I first discuss the significance of participants' strong belief that better collaboration makes better and more diverse games. I then address some of the challenges in supporting diverse collaboration (and collaborators) that I have identified within participants' discussions of this work.

7.2.1: Better and More Diverse Collaboration Makes Better and More Diverse Games

Previous research has emphasized both the creative and the collaborative nature of video game design work. It has not, however, considered the relationship of diversity to either aspect. For example, while Panourgias et al. (2014) deeply examine the relationship of game developers' collaborative workflow and their reliance on specific ICTs to their generation of creative ideas for imagined novel game-playing experiences, their model of this process does not discuss how creativity itself may be related to diversity. Similarly, while O'Donnell (2014) makes significant contributions towards understanding "the everyday practices of videogame developers," this research does not cover issues related to diversity and inclusion in any significant depth.

My findings both support this previous work and extend it by discussing the impact that different aspects of diversity and inclusion have on the creative, collaborative process of making a video game. I have discussed several examples throughout the previous three chapters in which participants not only consider collaboration to be essential to completing their daily work tasks, but also consider the inclusion of diverse perspectives to be vital to performing that work *well*. Moreover, participants feel that meaningful creative collaboration is a highly enjoyable part of their work and is one of the benefits of working in this field. As one participant described:

> The coolest part of this job, honestly, is when we have that conversation [between different job roles] and I get something that wasn't what I had in my head at all, but it's *cooler* than what I had in my head. (Sam Johnson)

Accordingly, collaboration that successfully incorporates diverse perspectives has a significant impact not only on the process of everyday video game design work, but on the final products of that work.

Previous research, however, has not clearly examined this relationship between supporting better and more diverse collaboration and producing better and more diverse games. As I discussed in Chapter 6, 14 of 20 participants emphasized the impact that support for diverse members has on the development of better and/or more diverse video games—and that increasing the quality and the diversity of game products are both highly desirable goals. Accordingly, this research not only surfaces this important relationship but also makes significant progress into understanding how to best facilitate these goals.

Diverse creative collaboration, however, is not always a simple process.

7.2.2: Challenges in Collaboration

Previous research has identified several significant challenges within the collaborative process of making video games. For example, Petrillo et al. particularly highlight the problem of communication among teams as being specific to the game design industry, arguing that while "the team in traditional software engineering is usually relatively homogeneous," the video game design industry is multidisciplinary and "attracts people with a variety of profiles such as plastic artists, musicians, scriptwriters, and software engineers" (2009, p. 19). However, they do not identify diversity specifically as being related to any of these problems.

My findings not only support this observation, but also illustrate the importance of addressing this challenge while considering issues related to diversity and inclusion. In Chapter 5, participants discussed difficulties in communication across different job roles and departments, most significantly in relation to differences in tool usage between artists and programmers. As I discussed in Chapter 4, however, while several participants in organizations larger than "tiny" acknowledge that active and ongoing collaboration

across departments/teams is challenging, many of them still expressed the desire to either continue to collaborate or even to increase their level of collaboration on this level.

Additionally, Tran and Biddle's (2009) ethnographic analysis of the day-to-day activity of a team responsible for designing and developing game content revealed that the success of innovative design within a culture of collaboration is highly dependent on the quality of interpersonal relationships within the team. Participants in this study similarly discussed several examples how interpersonal relationships affect the design process, including in terms of creating different outcomes for members with different personal characteristics. My findings therefore also support the significance of addressing this issue, especially in terms of the various ways that marginalized members can be isolated from the creative collaboration process.

As I discussed in Chapter 2, the limited previous research in the specific area of understanding collaborative video game design work suggested two significant aspects of this work that were particularly salient to understanding the role of diversity in this work: the structure of organizations (Johnson, 2013; O'Donnell, 2014; Panourgias et al., 2014) and the selection and use of collaborative tools (Koleva et al., 2015; Panourgias et al., 2014). In the following two sections, therefore, I additionally revisit previous work in each area (including the larger body of research that extends beyond the specific context of video game design) and discuss how this study enhances those bodies of research.

7.3: Examining Specific Structural Features in Organizations

Within the limited previous work on the specific field of collaborative video game design, both Johnson (2013) and Panourgias et al. (2014) discuss the role of organizational structure in determining the specific way(s) that work is done within a collaborative video game design team. In particular, Johnson argues that changing

organizational conditions on a structural level can better allow for gender diversity and individual agency and that, furthermore, employing "other types of diverse organizational structures can impact the role of video games for the broader culture" (2013, p. 136). Johnson concludes this research by noting that while "lessons learned from analyzing the boundary divisions at one studio can be instructive in thinking of ways to make game studios open to more diverse perspectives and influences," the nature of providing a detailed analysis of a single studio creates certain obvious uncertainties and limitations—therefore, more research on game production is needed "so that we can begin to compare different organizational structures; studios of different sizes; studios in different regions of the world, independent, 'indie' and publisher-owned studios; and studios that are longstanding or emergent" (2013, p. 156).

Similarly, O'Donnell highlights important tensions between the creative process of game design and the larger social structures that surround it. By focusing on interviews primarily with developers from large, well-established studios, however, O'Donnell (2014) may miss some of the potentially significant features of smaller organizations, as well as the type of comparisons that Johnson (2013) suggests. Additionally, O'Donnell specifically acknowledges "a lack of insight into why […] the [gender] demographics of game develops have remained relatively static and continue to be significantly lower than those who play games" and identifies a lack of focus on the issue during interviews as one reason why most female participants "did not reflect on their gendered position," as well as potentially focusing "too myopically on specific corporate sites throughout the research" (2014, p. 276). In response to this "failing" of the text, O'Donnell argues that additional future research of women game developers "is critical" in order to "better understand what compels and constrains their progress in the industry" (2014, p. 276).

Accordingly, this study directly extends the body of previous research by specifically examining multiple video game design organizations with various structural features, including organizations with different sizes, as well as different methods of task division and allocation, approaches to coordination, processes of decision making, and strategies for recruitment and hiring. Moreover, this research discusses how participants relate these structural features of their organizations to aspects such as "diverse perspectives and influences," individual diversity and agency, and the impact of video games within the broader culture. In order to better understand how these features directly impact the work of organization members from underrepresented and marginalized groups, I additionally cultivated a specific focus on the experiences of such groups during the interview process—with successful results towards better understanding what "compels and constrains their progress in the industry."

The rest of this section discusses how—in addition to answering Johnson's call to compare "different organizational structures," as well as analyzing "studios of different sizes" and the differences between "independent, 'indie,' and publisher-owned studios" (2013, p. 156) within the field—this research extends previous work on understanding the structure of organizations more broadly.

7.3.1: The Devil Is in the Details

As I discussed in Chapter 2, there are many existing theories for understanding organizational structures, each with different types or models of organizations (see, for example, Galbraith, 2009; Hedberg, Dahlgren, Hansson, & Olve, 1997; Merton, 1968; Mintzberg, 1979; Spinuzzi, 2015). Within the fields of information technology design, the "network" and the "bureaucratic" models are often seen as being especially significant (Baron et al., 1999; Johnson, 2013; Spinuzzi, 2008)—and, often, as being at

odds. In contrast to applying such models wholesale, many authors have criticized the way that contemporary information technology organizational structures are even described or labeled. For example, Winter et al.'s neo-sociotechnical systems approach is intended to "de-containerize" the way that organizational boundaries and structures are depicted within IS research, in order to better explain the "flexibility in temporal precedence between infrastructure, work, and organization" within different types of overlapping work systems that have inherited properties from multiple different systems and organizations (2014, p. 264). Accordingly, tracing and analyzing such legacies within organizations and their effect on the diverse individuals working within the group are a critical step towards better understanding various aspects of diversity within an organization.

In accordance with my research approach of using both thematic analysis and a modified grounded theory approach, I inductively developed a list of salient features of participants' video game design organizations that is directly based on their discussions. Only after creating this list did I revisit previous literature in order to better contextualize each of these *specific* features within broader theoretical models of organizations. (As I discuss in Chapter 2.) Thus, while I did identify some areas of overlap for participants' organizations with the models of bureaucratic, institutionally adhocratic, network/all-edge adhocratic, and single-team organizations, these overlaps did *not* capture the full picture of how these specific organizations function. (I discuss the significance of my list of salient features in more detail in Chapter 8.) Accordingly, this research works to "de-containerize" the way that organizational boundaries and structures are understood within this area of work, in favor of a more contextualized approach that recognizes inherited properties from multiple different systems and organizations by focusing on salient features (as opposed to forcing each organization to "fit" an existing model).

Finally, this study also addresses previous research indicating that organizational structures are not neutral and that "inequality regimes" within these structures dictate expectations and limitations based on factors such as race, class, and gender through a set of "interlocked practices and processes that result in continuing inequalities" for members of underrepresented groups (Acker, 2006, p. 441). Some previous research indicates that "hierarchies are usually gendered and racialized, especially at the top" and that "the steepness of hierarchy is one dimension of variation in the shape and degree of inequality," whereby "the steepest hierarchies are found in traditional bureaucracies in contrast to the idealized flat organizations with team structures, in which most, or at least some, responsibilities and decision-making authority are distributed among participants" (2006, p. 445). According to Smith-Doerr, for example, firms "governed by networks, rather than bureaucracies," allow for greater equity between male and female supervisory positions because "hierarchy and rules hide gender bias, while reliance on ties outside the organization provides transparency and flexibility" (2004, p. 25). While more "flat" team structures might provide greater opportunity for equity than hierarchical bureaucracies, this opportunity does not necessarily come without strings (Acker, 2006). For example, adapting to being treated "equally" on a team within a computer development firm may require members from underrepresented groups to invent ways to cope with a work culture that does not fit well with their own identity, and which may actively create the feeling that they are "partly outsiders who [do] not belong" (Martin & Meyerson, 1998).

Other research suggests that team-organized work may not reduce gender (Barker, 1993) or racial (Vallas, 2003) inequality much at all within an organization, as biases are frequently simply shifted as teams are integrated into the organization. In contrast to criticisms of the bureaucratic model, Dobbin et al. (2015) found that reforms of bureaucratic organizations can indeed be effective at increasing diversity, but only when

such reforms are viewed as part of a "complex story." They argue that reforms that "engage managers in recruiting and training" members of underrepresented groups for management posts can successfully promote diversity, while "those designed to control managerial bias lead to resistance and tend to backfire" (2015, p. 1034). Other research indicates that challenging assumptions that workplace "bureaucracy" is inherently bad or harmful for diversity actually reveals prospective improvements for groups such as women (Baron et al., 2007).

Participants in this study discussed many examples of "inequality regimes" within their different organizations—and these examples support nearly every single one of the previous findings that I have listed above. I therefore argue that trying to determine which overall organizational model (e.g., bureaucratic or network) is "better" for supporting diversity is not a meaningful pursuit. Instead, de-containerizing the way that organizational boundaries and structures are understood within this area of work and focusing on the detailed assemblage of specific structural features additionally allows for a better understanding of how these features directly impact diversity within a particular organization—and thus, how they might be addressed to better support inclusion within that organization. In this case, I argue, the "devil" of exclusionary practices can best be found by examining the details of specific structural features (and how those features interact).

This focus on understanding how the details of different structural configurations relate to diversity and inclusion within an organization should not, however, preclude an examination of the role of individuals within those organizations.

7.3.2: Individuals Still Matter

As I discussed in Chapter 1, Western social scientists and philosophers have been interrogating the boundaries between the influence of larger social structures and the sphere of individual agency for hundreds of years (Bourdieu, 1977, 1989; Giddens, 1979, 1984; Hurrelmann, 1988). Today, organizational studies and information systems researchers attempt to reconcile the purity of true structuralism (and other such theories wherein human action and interaction is primarily or completely shaped by the social structures that shape modern human life) with some degree of independent human capability to think and/or act that is not pre-determined by the social structures into which an individual human is inevitably born. Accordingly, I have similarly discussed examples of the importance of individuals within the structure of their video game design organizations.

Previous research has identified several ways in which individuals can impact the structure of their organization. Fundamentally, the "logics of organizing" that Baron et al. (1999) describe are one significant example of how an individual's unique perspective can impact the structure of an organization. Accordingly, one way for individuals to either express a diverse perspective or to actively support diversity within an organization is to seek a position such as "team lead"—or even to found a completely new organization. The ability to create change from the "top down" or to assert a large amount of agency within an organization, however, is obviously a more privileged—and more uncommon—option than many individuals are able to pursue. Additionally, Bjerregaard and Jonasson argue that by moving away from the idea that "agency is primarily associated with the rather exceptional creation or disruption of a relatively stable [institutional] structure," researchers and theorists can instead analyze a new form of

agency found within the "continuous, active work of managing novel contradictions" that is performed by individuals within their everyday work (2014, p. 1507).

Accordingly, while my discussion of the structure of organizations tends to turn the lens of diversity towards examining structural aspects of collaborative video game design work, my focus on organizational structure does not eclipse individual agency within organizations—especially in terms of diverse perspectives, interpretations, and reactions to those structures. This study therefore extends such previous research in the general area of understanding individual agency within organization structure by highlighting this tension within the specific field of video game design. Participants discussed multiple examples of where individuals within various video game design organizations have had a significant impact on diversity within the structure of their organization, in addition to discussing the importance of "continuous, active work of managing novel contradictions." In Chapter 6, I additionally discussed how a sense of a *lack* of agency for individuals engaged in promoting diversity and inclusion—particularly members of underrepresented and marginalized groups—can ultimately lead to "checking out" of the design process or even leaving their organization entirely. Such a lack of agency accordingly has a detrimental effect on both the diversity of the organization and the games produced.

Considering organizational structure within video game design through a lens of diversity, however, cannot be separated from examining "the principal tools game developers make use of in their everyday work, how the workflow is organized, and how the work is deeply embedded within patterns of collaboration" in this field of work (Koleva et al., 2015, p. 142). I therefore turn next to discussing how this research extends previous work on the relationship of collaborative tool selection and use to diversity within an organization.

7.4: Selecting Collaborative Tools to Support Diverse Work

Despite great strides in areas such as user-centered design and user studies towards a more diverse concept of the "user" and their role in technology design (e.g., Oudshoorn & Pinch, 2003; Oudshoorn et al., 2004), the same attention to diversity has not been as clearly applied to studies of tool selection and usage—especially within organizations. Within the small body of previous research on collaborative video game design, Koleva et al. particularly highlight the importance of collaboration tools, especially ones that support "a variety of situated interactions and the relevance of features for discussion" and enable "interruptability and flexible communication and sharing practices" (2015, p. 149).

Additionally, Panourgias et al. argue that "the assumption of a separation between creativity on the one side and technological development on the other" is not a productive approach to understanding individual agency in video game design work (2014, p. 124). They contend that it is, therefore, "more fruitful to focus on the intimate tangle of digital systems, objects and people and their co-emergence, co-production, and the mediations amongst them that often subvert conventional disciplinary, organizational, and territorial boundaries" (2014, p. 124). This approach also potentially affords greater opportunity for identifying and understanding individual diversity within the use of ICTs in video game design work.

In addition to supporting these findings by both Panourgias et al. (2014) and Koleva et al. (2015), this research extends previous work on understanding the relationship to collaborative tool selection and use to diversity. This section accordingly discusses how this study relates to previous research on the effects of diverse individuals on work tool understanding and use. I then discuss how this dissertation reveals the need

for additional research into how to better address the "technical" aspect of diversity within socio-technical systems such as video game design organizations.

7.4.1: The Effects of Diverse Individuals on Work Tool Understanding and Use

Several areas of previous research have developed notable models and theories to explain and guide the process of selecting ICTs for use in specific tasks, but each of these fields still has some trouble accounting for diversity within tool selection models. HCI concepts such as "cognitive fit" and "task-technology fit" still struggle to reconcile differences both between diverse individuals and between individuals and larger group structures (Davis, 2006; Te'eni, 2006). Similarly, the widely-used Technology Acceptance Model from IS (Davis, 1989, 1993; Legris et al., 2003)—which focuses on variables such as the "perceived usefulness" and the "perceived ease of use" for individual users—faces similar issues. Although most of these models acknowledge that individual and group differences may play a role in technology use decisions, few of these models critically analyze the diversity-related tradeoffs that may be involved with selecting a technological tool to support collaborative work within a specific social and organizational context.

In contrast to the more "individually-focused" models such as cognitive fit and task-technology fit, other theories within fields such as IS have tried to more obviously incorporate some of the organizational aspects of tool selection, design, and use (e.g., Poole & DeSanctis, 1990). For example, Orlikowski's (1992) structurational model of technology acknowledges "institutional characteristics," while the Social Influence Model of Technology Use (Fulk & Steinfield, 1990) considers factors such as "social influence" and "situational factors." Yet while some models of ICT adoption and use have made gestures towards acknowledging diverse people, work styles, and perspectives

within an organization (e.g., Mason & Mitroff, 1973), such potential forms of diversity have not been deeply examined.

Accordingly, this study extends such previous work by supporting some aspects of both the individually-focused tool selection models (such as participants' emphasis on the ease of use in selecting a tool) and the organizationally-focused tool selection models (such as participants' description of the importance of industry standards and fitting a tool to an existing collaborative workflow). This research additionally identifies the rationales for selecting specific tools specifically within video game design organizations—and then discusses how participants relate those different rationales to aspects of diversity within their organization.

Participants additionally discussed how specific "rules" of how a tool should be used can affect different individuals and groups within their organizations, even in organizations where the norms around tool usage may be less formal. Individuals who either cannot or choose not to conform to these usage guidelines may not remain in the group or may not be considered legitimate members of the group (Lave & Wenger, 1991; Sims, 2014). In Chapter 5, I discussed how norms and experiences around tool selection and use within video game design organizations can likewise be divisive on both the individual and group level, particularly between artists and programmers. This kind of "rule-enforcement" for tool selection and use varies with different structural features, and, in many ways, "diversity" has already been pre-defined and enacted before many individual users may have interacted with a tool at all.

Accordingly, as with my discussion of organizational structure in section 7.3, this study emphasizes the importance of individual agency in both tool selection and use. Whenever individuals assert some form of diversity through their individual usage of tools within an organization, their diverse perspectives will inevitably bump against each

other. Such differences in work styles (coming from the differing use of work tools) can also affect the collaborative work of the group/organization—with potentially positive or negative consequences. Although previous research has looked at how diversity within a group may affect creativity and work performance (e.g., Jackson & Ruderman, 1995), this study additionally examines the role of diverse tool usage in shaping the ability to both express and understand generative differences. For digitally creative and highly collaborative fields such as video game design work—wherein, moreover, both the final "product" and the work process itself are inextricably linked to ICT selection and usage—applying the lens of diversity seems especially urgent and relevant.

As I discussed in Chapter 5, however, most participants expressed some (at least initial) difficulty in directly relating aspects of diversity and inclusion to their selection and use of collaborative tools. I therefore next discuss the significance of additional research into addressing diversity within the "technical" aspects of the socio-technical system that is a video game design organization.

7.4.2: Addressing the "Technical" in Socio-Technical

In general, participants found it much easier to discuss issues of diversity and inclusion in terms of organization structure than in terms of collaborative tool selection and use. As I discussed in Chapter 5, when asked (at the end of the interview instrument), "Is there anything else that you would like to tell me about the relationship, if any, between diversity and the use of collaborative tools within your work organization or group" (Q23), most participants hesitated to respond and several even appeared to be somewhat confused by this question. Accordingly, potential relationships between collaborative tool selection and use and diversity were particularly difficult to surface during interviews without some additional feedback from me. While a few participants

were able to immediately offer examples of where diversity and collaborative tools might be related, some simply did not see any connection between the two.

Participants' focus on the more "social" aspects of their organization in terms of diversity and inclusion may have several different causes. It may be the case, for example, that it is much easier for individual members to see the presence of (or absence of) diverse people in diverse positions within the daily aspects of their work, as well as the immediate effects of a lack of inclusion (such as a lack of demographic diversity in diverse positions within the organization)—even if they themselves do not identify as being part of an underrepresented or marginalized group. In contrast, it may be harder to perceive or relate to other members' experience of non-inclusive tool selection and use if this experience does not directly affect one's own personal experience. While most participants did not readily relate inclusion to their use of collaborative tools, many were intrigued by the prompt and then were able to identify at least one demographic group that might be affected by tool selection or use.

Additionally, many participants responded to my additional prompting (or to my simply waiting for an extended period of time) by eventually either offering concrete examples or considering hypothetical situations. Several participants also remarked that they had never considered this potential relationship and/or that they were now interested in learning more. Accordingly, participant interest (and ability) in thinking aloud about the relationship between diversity and tool selection and use indicates that a guided evaluation or consideration tool could be useful for helping video game designers and their organizations to address inclusion in the "technical" aspects of their work. Such a discussion tool would be particularly enhanced by integrating the experiences and perspectives of members from underrepresented and marginalized groups.

As there is not (to my knowledge) an existing body of previous work on eliciting such feedback specifically with the field of collaborative video game design, additional research in this area is especially pressing. As Altizer et al. argue, the most significant challenge to collaboration during the process of game design "lies in the need to develop a shared understanding," leading them to develop a participatory design method that can allow diverse stakeholders who have "different perspectives and use different vocabularies" to work together to produce "a single shared knowledge system" (2017, p. 406). Adopting such an approach could similarly support a better understanding of and path to addressing the "technical" aspects of diversity within collaborative video game design organizations.

In the final section of this chapter I conclude by discussing the limitations of this study.

7.5: LIMITATIONS

This study contains several areas of potential limitations, including: the size of the study, the diversity of both the participant and organization sample, the presence of both self-selection and social desirability biases, and the potential of having missed other significant factors. I briefly discuss each of these limitations in the remainder of this section.

7.5.1: Size of the Study

Including 20 participants and 19 organizations, the sample size for this study is fairly modest. As I discussed in Chapter 3, however, the in-depth nature of this research does not necessarily require a very large sample size (compared to more quantitative methods). As indicated by the depth and quality of examples in Chapters 4-6, this sample

size is sufficient to appropriately address each of my research questions to the point of theoretical saturation. Charmaz (2006) additionally argues that the saturation point of theoretical categories in qualitative research (especially using a grounded theory approach) should also be considered within the scale of the study and of the claims being made—and that sample sizes can accordingly scale with these concerns, allowing for smaller sample sizes where these concerns are met.

7.5.2: Diversity of Participant and Organization Samples

An additional limitation of this study beyond the size of the sample is related to the diversity of both the participant and organization samples. While I have attempted to achieve the greatest diversity of personal demographics/identity groups possible within my participant sample (without specifically recruiting participants from any specific groups), this sample is not inclusive of all such groups. Since all demographic descriptions of participants within this research are based solely on demographics that participants discussed in reference to themselves during the course of the interview, it is likely that sample is in fact more diverse than presented here. I must acknowledge, however, that there are many underrepresented and marginalized groups that are missing from this research—most notably including (but not only): any self-identified Black/African American participants, any self-identified Latinx/Hispanic participants, any self-identified Indigenous/Native American participants, and any participants who self-identified specifically as being nationals of a country other than the U.S.

At the same time, the diversity both of participants' job roles and of organizational features is expansive but not exhaustive. While many job roles are represented within this study, not all potential roles are included. Similarly, while a range of organizations with different structural features (including size) are included in this

research, not all possible arrangements of video game design organizations are represented. Most notably, this study does not include any organizations with between 16 and 50 members or with over 500 members.

7.5.3: Self-Selection and Social Desirability Biases

This study may be limited by both self-selection and social desirability biases. As I discussed in Chapter 3, all participants were aware of both the goals and the title of this study before self-selecting to participate. Accordingly, participants' overwhelming support for diversity and inclusion within video game design organizations is likely related to some degree with their interest in participating in this study. Since an explicit primary goal of this research, however, was to compile recommendations to support the inclusion of underrepresented and marginalized groups (which I was able to accomplish from participants' discussions), I do not consider this to be a serious limitation.

Similarly, while participants self-selected into this study due (at least in part) to a desire to support diversity and inclusion within their industry, participants may also have had a desire to avoid looking "unsympathetic" to supporting inclusion. Given the context of the study, there is also likely a strong social desirability bias against appearing to be too ignorant of the challenges that members from marginalized groups face, or even of being outright exclusive (racist, sexist, etc.) towards these groups. While this bias may have prevented some participants from discussing examples that presented themselves (or perhaps their organizations) in an extremely negative light, many participants shared examples of non-inclusive behaviors from others within their organizations. I therefore also do not consider this bias to be a serious limitation for the specific goals of this study. Further, any interrogative social science research conducted ethically in a free society is subject to both of these biases.

7.5.4: What Did I Miss?

Finally, as with any single study, there is no way that I could have captured the full complexity of understanding the relationship of diversity to collaborative video game design work. In this section, therefore, I briefly outline some of the limitations of my focus in this study and their implications for future work (discussed in more detail in Chapter 8).

7.5.4.1: What I Thought I Might See but Didn't

As I have discussed in Chapters 1 and 3, while I employed a modified grounded theory approach to understanding the data in this study, I approached this research with some prior theoretical and practical understanding of this topic area. Accordingly, I did have some expectations about what kinds of topics might be covered in response to my interview questions. While many of the topics that we discussed and that I surfaced in my thematic analysis were unexpected, there were several topics that I was a bit surprised that we did not discuss. Some such topics include more description of the process of learning how to use tools (especially in relation to education pipeline) and more accounts of frustration in not being able to use tools in a way that reflects one's background or experience.

In particular, I was prepared to hear more personal accounts of being discriminated against or harassed, especially in terms of Gamergate. As I discussed particularly in Chapter 3, however, I developed my interview instrument to be somewhat neutral in terms of probing participants about their own concepts of diversity and their personal identities and experiences, in order to create a more open and welcoming recruitment and interview process for a wider range of participants. Additionally, I intentionally attempted to avoid focusing on "negative" questions (e.g., asking

participants specifically about discriminatory behaviors or experiences) and spent much of the interview trying to ground our discussion in terms of their everyday work experience. While I believe that my approach was well-suited to the nature of this study, it has likely influenced the degree to which participants felt encouraged (or able) to speak about these issues.[54]

Accordingly, it is difficult to determine just from this data whether such topics truly are not reflected in participants' experience or if they simply were not adequately surfaced during our interviews. Several authors—especially oral historians and narrative researchers—have explored the challenge of addressing what is notably "unsaid" within interviews and discussed the reasons behind such "shadow texts" or "shadow themes," especially in relation to somewhat sensitive social or personal topics (Davila, 2011; R. I. Simon, 2000; A. A. Smith, 2013). Future work in this area could perhaps use more targeted interview questions and focused interview techniques (de Medeiros & Rubinstein, 2015) specifically to dig deeper into potential shadow stories around these topics.

7.5.4.2: What I Wasn't Looking For

In addition to potentially failing to see some themes that I expected to find, I certainly missed other topics that I was intentionally not looking for. In response to my final question about what I should have asked during our interview, one participant responded at length, saying:

> I may be totally wrong about this, but if there was one thing that I think that maybe this sort of questionnaire could focus on more [it would be] intent. […] I

[54] Only one participant directly referenced any expectation that I might have asked more direct questions about identity and related personal experience. In response to my final interview question (Q24), this participant expressed some surprise that the interview did not ask about these topics but added that "it might not be appropriate for you to ask it."

> think intent is important because it serves as like a lens—and some questions absolutely did ask about intent, but there weren't a whole lot about, "What are your plans for the future? How do you plan on expanding? If you have the resources to do so, how do you think you would grow to solve problems?" (Mitchell Garrett)

He elaborated on why considering future outcomes beyond the moment captured by our specific interview might be important, saying:

> Because if you talk to developers who are doing diversity, you are seeing us at roughly the same state. Because you're seeing [us] as a state where, one, we have time to talk to you, [and] two, we're open enough to the public that you're able to see us. If there are studios that drop off the map because they failed, you're not going to be able to reach them because you're not going to be able to see them, because there's no way to find them. So, there's no way for you to know if there's some great filter that stopping diverse teams and killing them off in their tracks. […] [And so] if you're looking at people who currently are working and currently are successful, [then] you're going to miss out on what those filters are if you're not like looking to the future. And maybe there's some universal weak point between all of us, because at the end of the day, there are *way* more diverse games in production than get released, by an order of magnitude. There's got to be *something* that's stopping them. And I'm trying to figure out what it is. Because I'm worried that it's going to hit us. (Mitchell Garrett)

This limitation of not considering how plans may (or may not) have resulted in successful outcomes also echoes a few participants' concern (discussed in Chapter 6) that, by not considering the diversity of the final game produced by participants' organizations, I may be missing out on significant aspects of the relationship between inclusion in a game design organization and diversity within video games more broadly.

This particular study, therefore, is bounded by such scopes in time and is focused exclusively on the work process (and not the outcome of this work). In the following—and final—chapter, I discuss how such limitations of this study can serve as inspiration for future research.

CHAPTER SUMMARY

In this chapter, I synthesized overarching themes that address my findings from multiple research questions. I additionally return to the previous research that I discussed in Chapter 2 in order to show how this research enhances our understanding of the relationship of diversity to collaborative video game design work.

As I discussed in Chapter 1, I initially approached this research with an expansive understanding of diversity within both a more structural and a more individual perspective, while being sensitive to how mixtures of diverse identities and perspectives will both impact and be impacted by the work done in an organization. As I discussed in Chapter 6, the majority of the forms of diversity that participants discussed, however, revolve specifically around demographic and identity groups that are considered to be underrepresented within the field of video game design. This understanding of diversity in terms of demographic identity groups based on markers such as race, gender, class, disability status, sexual orientation or identity, age, and ethnicity is in line with previous research that has conceptualized diversity in these terms (Wood, 2003). Accordingly, this understanding of diversity is perfectly appropriate for the nature of this research and the methods that I have employed. Participants' experiences indicate, therefore, that applying more abstract understandings within the field of video game design is likely a future goal that can only be achieved after—or at least concurrently with—addressing work inequalities based on demographic identity groups around markers such as gender, race, religion, and sexuality.

I next briefly discussed how the context of Gamergate likely shapes participants' understandings of diversity specifically within the field of collaborative video game design. Although the problem of identity-policing within the communities of both game players and game designers has existed for a long time, the (fairly recent) events of

Gamergate have left many members of the industry thinking more concretely about such issues. Accordingly, this study enhances our understanding of the effects of both outright discrimination and extra emotional labor continue to have on members from underrepresented groups as they face challenges to their presence not only within their own organization, but within the gaming culture more generally. Perhaps because these challenges were only magnified by Gamergate (and not entirely new to groups who had already been facing such discrimination), however, very few of the participants who self-identified as being part of a marginalized groups actually discussed Gamergate in the context of their own experience. Perhaps more significantly, therefore, this research additionally highlights how such sympathetic members from non-marginalized groups can become more proactively engaged in promoting inclusion within the post-gamergate landscape.

This research also builds on previous work that has highlighted personal stories from members of marginalized groups about working in the video game design field, including instances of personal success, creative achievement, and even organizational change (DePass, 2018; Hepler, 2016). Although many participants from underrepresented and marginalized groups described having to face clear obstacles within the field due to their identity, many of them have been able to enact moments of transformation and agency within their work organizations—whether by speaking to managers about increasing diversity within a game, or by eventually becoming a team lead or studio head themselves. Accordingly, by highlighting and amplifying these participants' experiences, this research emphasizes the positive impacts that individual members from underrepresented or marginalized groups can have within their organizations and within the field more broadly.

This study additionally extends previous research on the role of the educational pipeline in broadening participation within STEM and IT fields by illuminating a similar relationship within the field of video game design. Participants in this study discussed how the lack of demographic diversity within the video game design industry is related to the educational pipeline in several ways, especially in relation to the hiring conundrum. In chapter 6, I discussed several recommendations that participants made for overcoming the so-called pipeline issues, for example, around expanding the types of educational qualifications considered within the industry and recruiting from diverse types of educational institutions. Other participants suggested that video game design organizations should take a more active role in supporting diversity within educational programs themselves.

Finally, this research extends previous work that has considered such struggles for inclusion within the STEM and IT workforces within the context of stereotypes within these fields. Accordingly, with this new understanding of how members of video game design organizations understand and discuss diversity within their workplace—especially in the context of broader discussions around the concept of diversity and broadening participation in the STEM and IT workforces—we can better understand how to support diverse collaboration specifically within the field of video game design.

I next discussed how this research looks directly at how the "actual work of games development is accomplished" (Koleva et al., 2015, p. 149) from the perspective of individuals working in range of different job roles at organizations with different features. These diverse participants all strongly empathized the collaborative nature of their daily video game design work and described working collaboratively with not only other members within the same job role, but with members across different roles. While participants' overwhelming discussion of the importance of meaningful collaboration in

video game design work is likely partly due to the way this study was framed, this emphasis confirms the need for research into this area. Additionally, participants' discussions of working with members across different job roles indicates that it is vital that members from a variety of roles be included in any research into this area.

My findings both support the limited previous work specifically in the area of collaborative video game design and extend it by discussing the impact that different aspects of diversity and inclusion have on the creative, collaborative process of making a video game. Participants not only consider collaboration to be essential to completing their daily work tasks, but also consider the inclusion of diverse perspectives to be vital to performing that work *well*. Moreover, participants feel that meaningful creative collaboration is a highly enjoyable part of their work and is one of the benefits of working in this field. Accordingly, collaboration that successfully incorporates diverse perspectives has a significant impact not only on the process of everyday video game design work, but on the final products of that work.

Previous research, however, has not clearly examined this relationship between supporting better and more diverse collaboration and producing better and more diverse games. As I discussed in Chapter 6, 14 of 20 participants emphasized the impact that support for diverse members has on the development of better and/or more diverse video games—and that increasing the quality and the diversity of game products are both highly desirable goals. Accordingly, this research not only surfaces this important relationship but also makes significant progress into understanding how to best facilitate these goals.

My findings additionally support previous research that highlights the problem of communication among teams as being specific to the game design industry, arguing that while "the team in traditional software engineering is usually relatively homogeneous,"

the video game design industry is multidisciplinary and "attracts people with a variety of profiles such as plastic artists, musicians, scriptwriters, and software engineers" (Petrillo et al., 2009, p.19). My study also extends this previous research by illustrating the importance of addressing this challenge for supporting inclusion across different job roles and departments, most significantly in relation to differences in tool usage between artists and programmers. As I discussed in Chapter 4, however, while several participants in organizations larger than "tiny" acknowledge that active and ongoing collaboration across departments/teams is challenging, many of them still expressed the desire to either continue to collaborate or even to increase their level of collaboration on this level.

Next, I discussed how this study directly extends the body of previous research by specifically examining multiple video game design organizations with various structural features, including organizations with different sizes, methods of task division and allocation, approaches to coordination, processes of decision making, and strategies for recruitment and hiring. In addition to answering Johnson's call to compare "different organizational structures," as well as analyzing "studios of different sizes" and the differences between "independent, 'indie,' and publisher-owned studios" (2013, p.156) within the field, this research extends previous work on understanding the structure of organizations more broadly. In accordance with my research approach of using both thematic analysis and a modified grounded theory approach, I inductively developed a list of salient features of participants' video game design organizations that is directly based on their discussions. Only after creating this list did I revisit previous literature in order to better contextualize each of these *specific* features within broader theoretical models of organizations. (As I discuss in Chapter 2.) Thus, while I did identify some areas of overlap for participants' organizations with the models of bureaucratic, institutionally adhocratic, network/all-edge adhocratic, and single-team organizations,

these overlaps did *not* capture the full picture of how these specific organizations function.

Accordingly, this research works to "de-containerize" the way that organizational boundaries and structures are understood within this area of work, in favor of a more contextualized approach that recognizes inherited properties from multiple different systems and organizations by focusing on salient features (as opposed to forcing each organization to "fit" an existing model). This study also addresses previous research indicating that organizational structures are not neutral and that "inequality regimes" within these structures dictate expectations and limitations based issues such as race, class, and gender through a set of "interlocked practices and processes that result in continuing inequalities" for members of underrepresented groups (Acker, 2006, p. 441). Because participants in this study discussed many examples of "inequality regimes" within their different organizations, I therefore argue that trying to determine which overall organizational model (e.g., bureaucratic or network) is "better" for supporting diversity is not a meaningful pursuit. Instead, de-containerizing the way that organizational boundaries and structures are understood within this area of work and focusing on the detailed assemblage of specific structural features additionally allows for a better understanding of how these features directly impact diversity within a particular organization—and thus, how they might be addressed to better support inclusion within that organization.

This focus on understanding how the details of different structural configurations relate to diversity and inclusion within an organization should not, however, preclude an examination of the role of individuals within those organizations. This study therefore extends such previous research in the general area of understanding individual agency within organization structure by highlighting this tension within the specific field of

video game design. Participants discussed multiple examples of where individuals within various video game design organizations have had a significant impact on diversity within the structure of their organization, in addition to discussing the importance of "continuous, active work of managing novel contradictions." In Chapter 6, I additionally discussed how a sense of a lack of agency for individuals engaged in promoting diversity and inclusion—particularly members of underrepresented and marginalized groups—can ultimately lead to "checking out" of the design process or even leaving their organization entirely. Such a lack of agency accordingly has a detrimental effect on both the diversity of the organization and the games produced.

After focusing specifically on the relationship of this study to previous research on organizational structure, I next turned to discussing previous work in the area of collaborative tool selection and use. In addition to supporting findings by both Panourgias et al. (2014) and Koleva et al. (2015) on the importance of collaborative tools specifically within video game design, this study extends such previous work on tool adoption and use by supporting some aspects of both the individually-focused tool selection models (such as participants' emphasis on the ease of use in selecting a tool) and the organizationally-focused tool selection models (such as participants' description of the importance of industry standards and fitting a tool to an existing collaborative workflow). This research additionally identifies the rationales for selecting specific tools specifically within video game design organizations—and then discusses how participants relate those different rationales to aspects of diversity within their organization.

Participants also discussed how specific "rules" of how a tool should be used can affect different individuals and groups within their organizations, even in organizations where the norms around tool usage may be less formal. In Chapter 5, I discussed how

norms and experiences around tool selection and use within video game design organizations can likewise be divisive on both the individual and group level, particularly between artists and programmers. This kind of "rule-enforcement" for tool selection and use also varies with different structural features. Accordingly, as with my discussion of organizational structure in section 7.3, this study emphasizes the importance of individual agency in both tool selection and use. Although previous research has looked at how diversity within a group may affect creativity and work performance (e.g., Jackson & Ruderman, 1995), this study additionally examines the role of diverse tool usage in shaping the ability to both express and understand generative differences. For digitally creative and highly collaborative fields such as video game design work—wherein, moreover, both the final "product" and the work process itself are inextricably linked to ICT selection and usage—applying the lens of diversity seems especially urgent and relevant.

Finally, as I discussed in Chapter 5, most participants expressed some (at least initial) difficulty in directly relating aspects of diversity and inclusion to their selection and use of collaborative tools. Accordingly, potential relationships between collaborative tool selection and use and diversity were particularly difficult to surface during interviews without some additional feedback from me. Participants' focus on the more "social" aspects of their organization in terms of diversity and inclusion may have several different causes. It may be the case, for example, that it is much easier for individual members to see the presence of (or absence of) diverse people in diverse positions within the daily aspects of their work, as well as the immediate effects of a lack of inclusion—even if they themselves do not identify as being part of an underrepresented or marginalized group. In contrast, it may be harder to perceive or relate to other members' experience of non-inclusive tool selection and use if this experience does not directly

affect one's own personal experience. While most participants did not readily relate inclusion to their use of collaborative tools, many were intrigued by the prompt and then were able to identify at least one demographic group that might be affected by tool selection or use.

Accordingly, participant interest (and ability) in thinking aloud about the relationship between diversity and tool selection and use indicates that a guided evaluation or consideration tool could be useful for helping video game designers and their organizations to address inclusion in the "technical" aspects of their work. Such a discussion tool would be particularly enhanced by integrating the experiences and perspectives of members from underrepresented and marginalized groups. As there is not (to my knowledge) an existing body of previous work on eliciting such feedback specifically with the field of collaborative video game design, additional research in this area is especially prescient. As Altizer et al. argue, the most significant challenge to collaboration during the process of game design "lies in the need to develop a shared understanding," leading them to develop a participatory design method that can allow diverse stakeholders who have "different perspectives and use different vocabularies" to work together to produce "a single shared knowledge system" (2017, p. 406). Adopting such an approach could similarly support a better understanding of and path to addressing the "technical" aspects of diversity within collaborative video game design organizations.

Lastly, in the final section of this chapter, I concluded by discussing some of the limitations of this study. These limitations include: the size of the study, the diversity of both the participant and organization sample, the presence of both self-selection and social desirability biases, and the potential of having missed other significant factors.

In the final chapter of this dissertation, I conclude by discussing implications of this research for both theory development and practice in the area of collaborative video game design. I then indicate some potential future directions for this work.

Chapter 8: Conclusion

In this final chapter, I conclude by discussing significant implications of this research for both theory development and practice in the area of collaborative video game design, including giving a summary of the recommendations for promoting inclusion that I discussed in Chapter 6. I then indicate some potential future directions for this work.

8.1: Implications for Theory

This study has significant implications for extending and developing theory within several areas of research, including developing a theoretical model of significant structural features of video game design organizations and understanding the most important reasons for collaborative tool selection in video game design organizations. I accordingly discuss each of these areas below, along with offering some potential future research questions for each area.

8.1.1: Developing a Theoretical Model of Significant Structural Features of Video Game Design Organizations

As I discussed in Chapter 4, I have inductively developed a list of salient structural features of participants' video game design organizations that is directly based on their discussions. These salient features include: size, task division and allocation, coordination, decision making, and recruitment and hiring. Only after creating this list did I revisit previous literature in order to better contextualize each of these *specific* features within broader theoretical models of organizations. Thus, while I did identify some areas of overlap for participants' organizations with the models of bureaucratic, institutionally adhocratic, network/all-edge adhocratic, and single-team organizations, I found that these overlaps did *not* capture the full picture of how these specific video game design organizations function. While all organizations larger than tiny employ

some bureaucratic features, there are still some differences between other features. Tiny organizations, however, have perhaps the greatest variation in features and absolutely cannot all be considered to be the same overall organizational model.

Accordingly, this unique list of salient features represents a novel contribution to discussing and classifying video game design organizations with more specificity and nuance than previous theoretical models. My approach works to "de-containerize" the way that organizational boundaries and structures are understood within this area of work, in favor of a more contextualized approach that recognizes inherited properties from multiple different systems and organizations by focusing on salient features (as opposed to forcing each organization to "fit" an existing model). Thus, this approach allows researchers to discuss these organizations in terms of their specific assemblages of salient features.

While size is perhaps the most significant feature for discussing the structure of an organization in many examples, this is not always the case. Additionally, there is not an exact one-to-one mapping on size to the other features for all organizations, although they may often be strongly related. For example, while some features are similar across a size grouping (such as large and very large organizations generally having more highly vertical hierarchical organizations), others are not (such as the degree to which members are assigned strictly-defined tasks and clear job roles within tiny organizations).

Additionally, because participants in this study discussed many examples of "inequality regimes" within their different organizations, I therefore argue that trying to determine which overall organizational model (e.g., bureaucratic or network) is "better" for supporting diversity is not a meaningful pursuit. Instead, de-containerizing the way that organizational boundaries and structures are understood within this area of work and focusing on the detailed assemblage of specific structural features additionally allows for

a better understanding of how these features directly impact diversity within a particular organization—and thus, how they might be addressed to better support inclusion within that organization.

This approach, therefore, is particularly valuable for applying to future research that aims to understand how diversity is related to the structure of a video game organization and can additionally be used to promote the inclusion of underrepresented and marginalized groups within this field.

8.1.1.1: Future Questions

Potential future research questions related to the continued development of a potential theoretical model of significant structural features include:

1. Are there additional salient features of organizational structure that were not addressed by this sample of video game design organizations?
2. How do changes in organization size (as organizations either grow or downsize) affect other salient features in different organizations?
3. Can such a model be applied to understanding diversity within organizations in other fields related to ICT design?

8.1.2: Understanding the Most Important Reasons for Collaborative Tool Selection in Video Game Design Organizations

Similar to my list of salient structural features, I have also inductively developed a list of significant rationales for how and/or why particular tools were selected based on participants' discussion. These reasons include: fitting an existing workflow; size; cost; the influence of upper management; ubiquity or industry standard; ease of use; and familiarity with the tool. Each of these specific rationales can potentially be investigated in terms of their effect of diversity within an organization, as well as in relation to the

various salient features of an organization's structure. Future research can therefore apply this list to understanding both how collaborative tools are selected within other video game design organizations, as well as how these decisions impact diversity and inclusion within those organizations.

I have additionally identified some significant differences in the formation of standards and norms around tool usage in organizations with different structural features. Furthermore, I have illustrated how different norms and/or standards around collaborative tool usage can divide organization members, including: dividing members within the same role, dividing members between roles, dividing members between demographics, and how differences in tool usage may (or may not) affect the equal treatment of organization members. These differences can also be related back to my list of salient structural features.

While this approach is not yet as robustly developed as my list of structural features, it may be additionally developed through future research that aims to understand how diversity is related to the selection and use of collaborative tools within video game design organizations and thus can also be used to promote the inclusion of underrepresented and marginalized groups within this field.

8.1.2.1: Future Questions

Potential future research questions related to the continued development of a potential theoretical model of salient factors in the selection and use of collaborative tools include:

1. How would talking to more organization members in larger organizations who were involved in the decision-making process to select specific tools affect this list?

2. Are there additional salient features of either tool selection or use that were not addressed by this sample of video game design organizations?

Additionally, in order to better facilitate discussion with future participants about the relationship of diversity and inclusion to tool selection and use, I recommend developing a discussion tool that employs this list as a starting point. With the help of such a tool, the additional future question might also be addressed:

3. How might this list be used to make design recommendations for collaborative tools that better support diversity in this work, while appealing to these salient rationales for tool selection and use?

8.2: Implications for Practice

In addition to having significant implications for several areas of theory, this study has significant implications for the practice of collaborative video game design. These implications can potentially affect diverse stakeholders within the video game industry, including: individual designers, design organizations, educators, and even players. In this section, I discuss such implications for supporting diversity within video game design. I then provide a summary of the recommendations for promoting the inclusion of underrepresented and marginalized groups within video game design organizations that I discussed in more detail in Chapter 6.

8.2.1: Supporting Diversity in Collaborative Video Game Design Work

Much of my discussion in Chapter 6 is aimed at illuminating the implications of this research for supporting both diversity and inclusion within the field of video game design work. My findings indicate that many practitioners (and all of my participants) strongly believe that supporting diversity and inclusion is of critical importance to this

field. In elaborating on why they felt that this support was so important, participants almost exclusively discussed one (or both) of two themes: a need for equality in society and/or the workforce, and a need for better and more diverse games. My findings accordingly have significant implications for the daily work practice of individuals within video game design (including, potentially, participants themselves), the development and continued day-to-day operation of video game design organizations, and the curricular development of video game design educational programs.

This research indicates that the best practices for supporting diversity within the workplace and within game content should first focus on the goal of placing diverse people in diverse positions within organizations. The only way to accomplish the goal of placing diverse people in diverse positions, however, is to actively work to overcome challenges associated with what I have termed "hiring conundrum." Additionally, while the basic presence of members from underrepresented groups is a critical first step, this presence alone is not enough to support diversity within game content—these individuals must have the agency and the ability to bring their full presence (bringing the whole self as equal) to both an organization and the design process. Supporting the full presence of members from marginalized and underrepresented groups requires addressing extra/invisible labor issues, in addition to providing active and visible support from non-marginalized allies and key decision-makers. Finally, both individuals and organizations must make proactive, concrete actions to enact this support and to address extra and invisible labor.

8.2.2: Summary of Recommendations for Promoting the Inclusion of Underrepresented and Marginalized Groups Within Video Game Design Organizations

In order to facilitate my explicit goal of better supporting the inclusion of members from underrepresented and marginalized groups within video game design organizations, I here compile a summary of key recommendations that I discussed in reference to significant themes in more detail in Chapter 6. While I have broken this section up based loosely on the relative size of an organization that these recommendations may be best suited for (based partially on the prevalence of participants from that organization size), these recommendations should not be considered exclusively applicable to the assigned organization size. Additionally, in general, these recommendations more easily scale upwards, rather than downwards—in other words, large and very large organizations will find it easier to adopt recommendations for tiny and small organizations than the inverse situation. Finally, most of these recommendations can be applied both by individual organization members (as a bottom-up approach) and as concerted organizational efforts (as a top-down approach). Accordingly, the recommendations for tiny and small organizations can easily be implemented by any individual member, while the recommendations for large and very large organizations can more easily be implemented by key decision-makers.

8.2.2.1: In Tiny & Small Organizations:

While individual agency is present in every size of organization, it is perhaps particularly noticeable in tiny and small organizations. Based on this study, organizations of such sizes are more likely to engage in collaborative decision-making, to have a "flatter" structure or to adopt the "nonemployer" model, and to recruit/hire based on close ties to individuals in their existing network of connections. Accordingly, many of the

recommendations for these organizations focus on these specific aspects of organization structure. Since most participants are members of either tiny or small organizations, most of the recommendation themes that I have identified are most easily related to organizations of these sizes. Key recommendations for organizations of these sizes can be found summarized in the table below.

Recommendation	**Thematic Source(s) (From Thematic Analysis)**	**Most Relevant Structural Features**
Take accountability for **expanding your network** of collaborators: • Attend game design and social networking events that introduce you to different groups of people, especially mixed groups • Avoid pre-conceived notions of "fit" and checklists of "qualifications" as much as possible • Challenge yourself to look beyond the "two degrees of separation" (e.g., friends, and friends of friends) model for recruiting members	Expanding and Diversifying the Network(s) *Sub-themes: Before Hiring; During the Hiring Process* The Hiring Conundrum *Sub-theme: Where Are They and How Do We Get Them In?*	Size; Task Division and Allocation; Recruitment and Hiring Processes
Ensure all members are **equally valued & heard**, especially in flat structures: • Be aware that members from	Addressing Extra and Invisible Labor *Sub-theme: Work*	Task Division and Allocation; Coordination;

 Table 2: Continued on next page

underrepresented and marginalized groups may be stereotyped into certain roles, tasks, or communication styles • Evaluate whether consensus-based decisions are actually supporting diverse perspectives	*Expectations Based on Appearance and/or Identity* Active Visibility and Engaged Support *Sub-theme: Sympathetic and Engaged Decision Makers*	Decision Making
Proactively support members from underrepresented and marginalized groups: • Listen to their experiences and be receptive to their concerns, especially about diversity and inclusion • Speak up to address non-inclusive and harmful behaviors within your organization once you become aware of them • Adapt the selection and use of collaborative tools to accommodate members from diverse backgrounds	Active Visibility and Engaged Support *Sub-themes: Support from (Non-Marginalized) Members; Sympathetic and Engaged Decision Makers* Addressing Extra and Invisible Labor *Sub-theme: Work Expectations Based on Appearance*	Coordination; Decision Making

 Table 2: Continued on next page

	and/or Identity	
Combat extra and/or invisible labor for members of underrepresented or marginalized groups: • Recognize the extra labor involved in self-advocacy and internally-motivated mentorship and advocacy • Acknowledge the emotional labor that such members may perform to combat feelings of inadequacy or to manage the reactions of others	Addressing Extra and Invisible Labor *Sub-themes: Self-Advocacy and Mentorship; Emotional Labor*	Task Division and Allocation; Coordination; Decision Making

Table 2: Recommendations for Promoting Inclusion in Tiny and Small Organizations

8.2.2.2: In Small & Large Organizations:

Small and large organizations are more likely to have more than one member performing the same job role and to employ hierarchical approaches to coordination and communication (such as using team leads). In addition to following the recommendations for tiny and small organizations, therefore, these organizations should also consider the following recommendations in the table below.

Recommendation	**Thematic Source(s) (From Thematic Analysis)**	**Most Relevant Structural Features**
Encourage the **agency** of **sympathetic and engaged decision-makers**, especially for making decisions that	Active Visibility and Engaged Support *Sub-theme:*	Decision Making; Recruitment and Hiring Processes

Table 3: Continued on next page

affect diversity and inclusion	*Sympathetic and Engaged Decision Makers*	
Endorse **advocates and champions**, especially in "higher up" positions for hierarchical organization structures	Active Visibility and Engaged Support *Sub-theme: Accountable Mentorship and Championship* Addressing Extra and Invisible Labor *Sub-themes: Self-Advocacy and Mentorship*	Coordination; Decision Making; Recruitment and Hiring Processes
Assign **accountable mentors** for new employees, especially within same role	Active Visibility and Engaged Support *Sub-themes: Accountable Mentorship and Championship; Support from (Non-Marginalized) Members*	Task Division and Allocation; Coordination; Decision Making

 Table 3: Continued on next page

Table 3: Recommendations for Promoting Inclusion in Small and Large Organizations

8.2.2.3: In Large & Very Large Organizations:

Finally, large and very large organizations are more likely than tiny and small organizations to have extensive resources available for building organizational infrastructure. Thus, in addition to all of the above recommendations, large and very large organizations are often well-positioned to act on the recommendations in the table below.

Recommendation	**Thematic Source(s) (From Thematic Analysis)**	**Most Relevant Structural Features**
Provide **organizational funding and vocal support** for **internal** diversity and inclusion initiatives, meetups, and support groups	Active Visibility and Engaged Support *Sub-themes: Inclusion-related Infrastructure; Support from (Non-Marginalized) Members*	Task Division and Allocation; Coordination
Proactively consider how to address inclusion more broadly within the industry through **externally-focused initiatives**, such as offering scholarships to students from diverse backgrounds	Active Visibility and Engaged Support *Sub-theme: Inclusion-related Infrastructure*	Recruitment and Hiring Processes; Decision Making

 Table 4: Continued on next page

	Expanding and Diversifying the Network(s) of Connections *Sub-theme: Keep Expanding* The Hiring Conundrum *Sub-theme: Where Are They and How Do We Get Them In?*	

Table 4: Recommendations for Promoting Inclusion in Large and Very Large Organizations

While these implications and recommendation for practice are specifically tailored for the field of video game design, most can be applied more generally to information technology and design organizations. Accordingly, the final section of this chapter discusses extending this study into future directions of research.

8.3: FUTURE DIRECTIONS

As indicated by my discussion in this chapter, there are many potential future directions for this research. In this final section, I briefly outline some directions for additional research in relation to each of the three main areas of this study.

8.3.1: Continue Developing Theoretical Model of Significant Structural Features

As I discussed above in section 8.1, my list of salient structural features represents a potential novel theoretical contribution to discussing and classifying video game design organizations with more specificity and nuance than previous models. There are, however, many remaining questions about this potential model. The following sections consider approaches to addressing the future questions that I posed in section 8.1.

8.3.1.1: Include Additional Organization Sizes and Expand Sample of Existing Sizes for Video Game Design Organizations

Future work in this direction would aim to expand the sample of every group of organization size, especially in the small (2 organizations) and very large (1 organization) categories. Additionally, although I did not identify any organizations as being within the "medium" category, I have decided to retain the category pending future research. Accordingly, future work that includes organizations of approximately 16-50 people would likely help to determine whether this category should remain separate, be combined with either the "small" or "large" category, or simply not exist. Similarly, future work could consider the presence of a "giant" category of organizations over 500 people.

Additionally, such future work should strive to include more participant demographics, both in terms of job roles within the organization and in terms of personal identity categories.

8.3.1.2: Apply the Model to Other Areas of Collaborative ICT Design Work

Once the potential model has been more robustly investigated with video game design organizations (as described above), future work could consider whether this model can be applied to understanding the structural features of organizations in other fields of

collaborative ICT design. Such fields might include mobile application design or any ICT design field that heavily involves collaboration across different job roles.

8.3.2: Continue Investigating the Relationship of Collaborative Tools and Diversity

As I discussed above in section 8.1, while this potential theoretical model is not yet as robustly developed as my list of structural features, it may be additionally developed through future research that aims to understand how diversity is related to the selection and use of collaborative tools within video game design organizations and thus can also be used to promote the inclusion of underrepresented and marginalized groups within this field. Similarly, many questions remain about this potential model. The following sections consider approaches to addressing the future questions that I posed in section 8.1.

8.3.2.1: Develop a Discussion Tool

As I have discussed both in Chapter 7 and in section 8.1, my findings indicate that developing a guided evaluation or consideration tool could be useful for helping video game designers and their organizations to address inclusion in the "technical" aspects of their work. Such a discussion tool would be particularly enhanced by integrating the experiences and perspectives of members from underrepresented and marginalized groups. While such a discussion tool would initially be aimed at better understanding diversity within the specific field of video game design, it could eventually be expanded into research in other areas of collaborative ICT design work.

8.3.2.2: Make Design Recommendations for Tools to Better Support Diverse Collaboration

As I discussed in section 8.1, the development of such a discussion tool could support future research into how my nascent model of salient rationales for tool selection and use might be used to support design recommendations for collaborative tools. Such tools may accordingly be better suited to supporting diversity within collaborative video game design work, while appealing to these influences on tool adoption and use (and thus, hopefully, encouraging more likely successful adoption and use).

8.3.3: Continue Supporting Inclusion Within the ICT Design Workforce

The list of recommendations for promoting the inclusion of underrepresented and marginalized groups that I have provided here is by no means exhaustive—it is, rather, a starting point. Unfortunately, despite decades of criticism and concern, the technology workforce in the U.S. still employs underrepresented and marginalized groups at a disparate rate. Although many researchers and several key initiatives have examined multiple reasons for underrepresentation and have offered some actionable suggestions, such demographic discrepancies continue to affect both the ICT design educational system and the workforces that it feeds into.

This research indicates that diverse representation within games can only be created in an "environment where people feel safe to share their different perspectives," in addition to supporting demographic workforce diversity (Kemps, 2015, para. 16). To understand how to create a work environment that can better support this desired diversity within other fields, more research is needed to address the specific needs of diverse individuals. As these fields continue to expand, therefore, understanding this specific type of work and the experiences of individuals within the field will only become more important.

By better understanding different forms of diversity and their impacts in relation to ICT development, education, and employment, I hope that we will be able to better support inclusion within the work of both current and future practitioners in these areas. Through this dissertation, I also hope to provide guidance more broadly on how work teams can acknowledge the differences within the various aspects of our lives while still working together to produce successful results. Such guidance relies on better understanding the role that ICTs can play in navigating forms of diversity within collaborative digital design and information technology work such as video game design—especially as ICTs are increasingly both crucial work facilitation tools and end products in themselves. Finally, in doing so, I argue that we must also confront the tension that exists between individuals' agency to engage with diversity and the relationship of diversity to the larger structures within which individuals are embedded.

Appendix A: Interview Instrument

Thank you for consenting to participate in this interview. During the interview, I will ask you a series of questions. Please answer each question carefully and to the best of your ability. Your participation is completely voluntary and greatly appreciated. You may, at any time, choose to skip a question or to end the interview. I note that you have agreed to be audio recorded, and that you have chosen to <be named> / <remain anonymous>. This interview should last approximately one to two hours.

Do you have any questions before we get started with the interview?

1. What is your current work role or job title?
2. How long have you been involved with game design?
    a. Approximately how many video games have you made collaboratively?
    b. Of the collaborative games that you have made, approximately how many would you consider to be professional work?
    c. How many of the collaborative games that you have made would you categorize differently from professional work, and how would you categorize them?
3. What attracted you to game design, as a general field?
4. Could you please list any other roles that you have played in a collaborative game design process?
5. How did you acquire the skills necessary to fulfill the collaborative video game design role (or roles) that you described?
6. How did you become involved in your current or most recent collaborative game design project?
7. How many people were involved in your current or most recent collaborative game design project, including in both your immediate work team and the larger organization (if applicable)?

As we continue through the interview, if you feel comfortable, please feel free to refer to your devices or to share an example from your work whenever you think it might be useful for contextualizing our discussion.

8. If you are currently involved in a game design project, could you please describe what your work day involved yesterday? (If you are not currently involved in a game design project, please try to describe the last work day of game design that you remember.)
    a. [Follow-up questions] Was there anything surprising about this day of work, and how was it surprising?
    b. Can you describe any particular successes or exciting moments that you had during this day of work?
    c. Can you describe any particular challenges or difficult moments that you had during this day of work?

9. Could you please describe an example from your most recent project of the basic workflow of collaboration between different roles in the project?
    a. [Follow-up questions] Was there anything surprising about this particular workflow, and how so?
    b. Can you describe anything that you think worked particularly well with this workflow?
    c. Can you describe anything that you think was particularly challenging with this workflow?
10. Could you please describe an example from your most recent project of an important decision that was made and how it was handled within the structure of your organization or group?
    a. [Follow-up questions] Was there anything surprising about this example, and how so?
    b. Can you describe anything that you think worked particularly well in this example?
    c. Can you describe anything that you think was particularly challenging in this example?
11. Could you please name and describe the collaborative tools that you used in your most recent project while working with your organization or group? These could include any kind of tools that you used to coordinate, communicate, visualize, or share work-related information or tasks with others in your group.
    a. [Follow-up question] How important do you feel these particular tools are for performing your work?
    b. Can you provide any (additional) examples?
12. To the best of your knowledge, could you please describe how or why these particular tools were selected for that project?
13. To what extent does your game design organization or group have a shared or common approach to using collaborative tools?
    a. [Follow-up question] Can you provide any examples?
14. To what extent have you worked with individuals from diverse backgrounds, identities, perspectives, and experiences within the field of game design?
15. How important do you feel it is for video game design organizations to support members from diverse backgrounds, identities, perspectives, and experiences, and why do you feel that way?
16. Can you provide an example from your own game design work experience of an instance in which you felt issues related to diversity or moments of difference became significant or particularly noticeable during that work?
    a. [Follow up questions] How did this instance affect your own work, both at the time and moving forward?
    b. How do you think this instance affected others' work, both at the time and moving forward?
    c. How do you think this instance affected the larger group or organization, both at the time and moving forward?

    d. Overall, do you feel that this instance either supported or worked against diversity within this work? How so?
    e. How well prepared did you feel for this instance?
17. Overall, how well do you feel your current or most recent game design organization supports members from diverse backgrounds, identities, perspectives, and experiences?
18. Can you provide examples of where you feel diversity was well supported within your current or most recent game design organization?
19. Can you provide examples of where you feel diversity could have been better supported within your current or most recent game design organization?
20. What, if anything, would you like to see game design organizations do differently in terms of supporting diversity within the workforce?
21. What, if anything, could individual organization members do to better support diversity within their everyday collaborative work?
22. Is there anything else that you would like to tell me about the relationship, if any, between diversity and the structure of your organization or group?
23. Is there anything else that you would like to tell me about the relationship, if any, between diversity and the use of collaborative tools within your work organization or group?
24. Is there anything else that I should have asked or that you would like to add related to your views about or experiences with support for diversity within collaborative video game design work?

Appendix B: Organization Case Attributes

	Total Size	Divided into teams	Hierarchical structure(s)	Lead(er)s coordinate between roles	Strict Task Division(s)
TinyOrgA	2-5 or 6 people	No	No	No	Between individuals*
TinyOrgB	5-6 people	No	Yes	No	Between individuals
TinyOrgC	3-4 people	No	No	No	No
TinyOrgD	3 people	No	No	No	Between individuals
TinyOrgE	2-3 people	No	No	No	No
TinyOrgF	1-3 people	No	Yes	No	Between individuals
TinyOrgG	1-3 people	No	No	No	Between individuals
TinyOrgH	2-4 people	No	No	No	Between individuals
TinyOrgI	3 people	No	No	No	No
TinyOrgJ	~6 people	No	Yes	Yes	Between individuals
TinyOrgK	3 people	No	Yes	Sometimes	Between individuals
Tiny_SmallOrg	4-7 or 15 people	Yes	Yes	Yes	Between roles
SmallOrgA	15 people	Yes	Yes	Sometimes	Between roles
SmallOrgB	8-12 people	Yes	Yes	Sometimes	Between roles
LargeOrgA	80-100 people	Yes	Yes	Sometimes	Between roles
LargeOrgB	50-60 people	Yes	Yes	Yes	Between roles
LargeOrgC	60 people	Yes	Yes	Sometimes	Between roles
LargeOrgD	76 people	Yes	Yes	Yes	Between roles
VeryLargeOrg	~200 people	Yes	Yes	Yes	Between roles

* = Individual members may fill multiple roles, but individuals' roles do not overlap

Table 5: Some Structural Attributes of Participants' Organizations

	Contracts work to others	Contracts work from others	Important decisions made collaboratively	Approximate # of concurrent projects	Offers ongoing support for games
TinyOrgA	Yes	No	With core members	1	No
TinyOrgB	Yes	No	No	1	No
TinyOrgC	No	No	With all members	1	No
TinyOrgD	No	No	With all members	1	No
TinyOrgE	No	No	With core members	1	No
TinyOrgF	Yes	Yes	No	1	No
TinyOrgG	Yes	No	With core members	1	No
TinyOrgH	Yes	No	With core members	1	No
TinyOrgI	No	No	With all members	1	No
TinyOrgJ	Yes	Yes	No	1	No
TinyOrgK	Yes	Yes	No	1	No
Tiny_SmallOrg	Yes	Yes	No	2	No
SmallOrgA	No	Unknown	Sometimes	Unknown	Unknown
SmallOrgB	No	No	Between team leads	Several	Yes
LargeOrgA	Occasionally for specific tasks	No	Between team leads	4	Yes
LargeOrgB	No	No	No	Several	Unknown
LargeOrgC	No	No	Between team leads	Several	Unknown
LargeOrgD	No	No	Unknown	Several	Yes
VeryLargeOrg	Unknown	No	No	Many	Yes

Unknown = I was unable to determine from the context of the interview

Table 6: Additional Attributes of Participants' Organizations

Appendix C: List of Collaborative Tools Discussed

Tool Name	Tool Type(s)	# of Organizations Using
3D Studio Max/3DS Max	Art-specific Tool	3
Absynth	Audio-specific Tool	2
Alienbrain	File Sharing/Asset Management, Version Control	1
Asana	Task Management	1
Audacity	Audio-specific Tool	2
Basecamp	Work Coordination, File Sharing/Asset Management	1
BitBucket	Version Control	2
BlueJeans	Communication	1
Confluence	Knowledge Management	3
Dev Studio	Programming-specific Tool	1
Discord	Communication	4
Dropbox	File Sharing/Asset Management	4
FL Studio	Audio-specific Tool	1
Gamebryo	Game Engine	1
GameMaker Studio	Game Engine	1
Gantt chart	Task Management	1
Git	Version Control	3
GitHub	Version Control	2
GitLab	Version Control	1
Gmail	Communication	2
Google Calendar	Work Coordination	1
Google Chat	Communication	1
Google Docs	Knowledge Management, Communication	6
Google Drive	File Sharing/Asset Management	6
Google Forms	Communication, Work Coordination	2
Google Hangouts/Meet	Communication	4
Google Sheets	Communication, Work Coordination, Knowledge Management	2
Google Slides	Communication, Work Coordination	3

 Table 7: Continued on next page

Google Suite	Various	2
Hansoft	Work Coordination	1
HipChat	Communication	1
Illustrator (Adobe)	Art-specific Tool	1
Instagantt	Task Management	1
Jira	Work Coordination, Task Management	8
Maya	Art-specific Tool	2
MediaWiki	Knowledge Management	1
Microsoft Excel	Communication, Work Coordination, Knowledge Management	2
Microsoft Office Suite	Various	1
Microsoft Outlook	Communication	2
Microsoft PowerPoint	Communication, Work Coordination	2
Microsoft Word	Communication, Work Coordination, Knowledge Management	4
Multitracker	Audio-specific Tool	1
Paint.NET	Art-specific Tool	1
Peer.in	Communication	1
Perforce	Work Coordination, Version Control	5
Pigin	Communication	1
Proprietary game engine/editor	Game Engine	2
ServiceNow	Task Management	1
Shared folders on internal network	File Sharing/Asset Management, Knowledge Management	2
Skype	Communication	6
Slack	Communication	11
Smartsheet	Task Management	1
StarLeaf	Communication	1
Subversion	Version Control	1
SunVox	Audio-specific Tool	1
Todoist	Task Management	1
TortoiseSVN	Version Control	2
Trello	Task Management, Knowledge Management, Work Coordination	9

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Twine	Game Engine (Text-Based)	1
Unity	Game Engine	7
Unity Collaborate	Version Control	1
Unreal Engine	Game Engine	2
Unspecified Agile development tool	Task Management	1
Unspecified email	Communication	17
Unspecified Kanban tool	Task Management	1
Unspecified spreadsheet(s)	Communication, Work Coordination, Knowledge Management	3
Unspecified video conferencing tool	Communication	2

Table 7: List of Specific Collaborative Tools by Tool Type and Use

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