

BIOPHILIC DESIGN IN THE HOME WORKSPACE:
ASSOCIATIONS WITH WELLBEING & CONNECTION TO NATURE

A Thesis

Presented to the Faculty of the Graduate School
of Cornell University

In Partial Fulfillment of the Requirements for the
Degree of Master of Arts

by

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May 2021

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Abstract

Prior research has found that exposure to nature benefits wellbeing and increases feelings of connectedness to nature, and that this connectedness is associated with pro-environmental behaviors. Unfortunately, most people experience a nature deficit. Additionally, because the COVID-19 pandemic has forced millions of people to work at home, the work-from-home workspace has become a critical environment impacting mental health. Consequently, this study seeks to determine if nature brought into the built environment of home workspaces through biophilic design can result in higher levels of wellbeing and connectedness to nature. It also investigates which biophilic design elements are perceived to be most effective at increasing connection to nature and wellbeing. The structure of this study consisted of an online survey and interviews. The survey investigates four variables: (1) connection with nature, (2) wellbeing, (3) amount of biophilic design, and (4) type of biophilic element. These variables were examined through established scales, panoramic photographs of work-from-home workspaces, and digital renderings depicting different biophilic elements within an imagined work environment. Follow-up interviews provided an in-depth look into the reasoning behind survey responses. Results of the quantitative data indicated no correlation between amount of biophilic design in work-from-home workspaces and wellbeing, though qualitative data disagreed. A significant relationship was found between amount of biophilic design and connection to nature for females, but not for males. Further results from the study suggest that biophilic design elements that enable direct experiences of nature, especially windows to natural areas, are perceived by workers as most effective at enhancing connection to nature and wellbeing. Overall, this research suggests it might be possible for biophilic design in the indoor environment to have similar effects as exposure to outdoor nature, but that the relationship is complex and requires further investigation.

Keywords: biophilic design, workspace, home workspace, wellbeing, connectedness to nature

Biographical Sketch

Patricia Heye was born and raised in California where she graduated from California Polytechnic State University in 2015 with a Bachelor of Architecture (B.ARCH) and minors in Sustainable Environments and Architectural Engineering. After graduation, she spent four years working as a designer in San Francisco, CA and became a licensed architect and a LEED Accredited Professional. Working as a professional enabled her to experience working with an interdisciplinary team, understand the intricacies of real-world projects, and identify opportunities for improvement within the construction industry regarding sustainable and equitable design.

In the effort to differentiate herself professionally and gain a specialization in sustainable design, Patricia decided to pursue her Master of Arts in Design with a concentration in Sustainable Design Studies at the department of Design and Environmental Analysis at Cornell University in the fall of 2019. During her studies, she continued to work as a Sustainability Specialist documenting LEED certifications for a professional architecture firm.

Patricia will be returning to the professional architecture field upon earning her graduate degree. She plans to use her knowledge to advance sustainable design within the construction industry and reduce the built environment's negative impacts. She also aims to encourage research-based, human-focused practices that will support the construction of equitable physical environments.

Dedicated to my husband, Patrick. This would not have been possible without you.

Acknowledgments

First, I would like to thank my advisor and committee chair, Dr. Mardelle Shepley for her invaluable guidance and direction for my thesis. Furthermore, I would like to thank the other members of my committee, Dr. Rich Stedman and Dr. Kati Peditto for their support and advice. I would also like to thank Uchita Vaid for her insights and the Department of Design and Environmental Analysis at Cornell University. The encouragement and mentorship from this collective group was integral to the success of my thesis.

Second, I would like to thank the researchers, administration, and staff of the anonymous architecture and engineering firm which allowed me to survey and interview their population during this trying time while they were working from home. Without your cooperation, this research would not have been possible.

Next, I wish to express sincere gratitude to Stephen Parry for his assistance in the statistical data analysis of this research. Thank you for helping me to make meaning out of numbers.

Finally, thank you to all of my family, friends and mentors who have supported me through the years and encouraged me to believe in myself.

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Chapter 1: Introduction

1.1 The Positive Impact of Access to Nature

Empirical researchers consistently find that exposure to the natural outdoor environment benefits mental health and wellbeing (Berg, Hartig & Staats, 2007; Bowler et al., 2010; Coon et al., 2011; Hartig et al., 2014; Houlden et al., 2018; Grinde & Patil, 2009; McMahan & Estes, 2015; Pearson & Craig, 2014; Ryan et al., 2010; Zelenski & Nisbet, 2014). According to a scoping review of experimental studies which examined varying treatment times in nature, as little as 10 minutes of time spent in nature can lead to positive impacts (Meredith et al., 2020). On the other hand, White et al. (2019) determined from a non-experimental nationwide survey in the United Kingdom that at least 120 min per week of time spent in nature was most highly associated with physical and psychological health.

Exposure to nature enhances mental health and well-being by improving psychological functioning through restoring attention (Berman, Jonides, & Kaplan, 2008; Berto, 2014; Gatersleben & Andrews, 2013; Hartig et al., 2003; Kjellgren & Buhrkall, 2010; White et al., 2013), reducing stress (Laumann, Garling, Stormark, 2003; Herzog et al., 1997; Parsons, et al., 1998) and heightening happiness (Zelenski & Nisbet, 2014). For example, when compared to built environments considered restorative (such as historical sites), natural environments were still found to enable greater restoration (Scopelliti, Carrus, and Bonquito, 2019). Nature has also been found to buffer the impact of stressful life events (Berg et al., 2010; Wells & Evans, 2003), increase rapid recovery after a stressor (Brown, Barton, & Gladwell, 2013) and decrease blood pressure (Hartig et al., 2003), especially in natural environments that include the presence of water (Gidlow et al., 2016). Furthermore, attention restoration and stress reduction have also occurred in laboratory studies when individuals simply viewed photographs or videos of outdoor environments (Berman, Jonides, & Kaplan, 2008; Berto, 2005; Brown, Barton, & Gladwell, 2013; Kjellgren & Buhrkall, 2010; Scopelliti, Carrus, and Bonquito, 2019; Ulrich et al., 1991). Beyond personal benefits, many studies have found that exposure to nature is

also positively correlated with pro-environmental behavior (Hartig, Kaiser, & Strumse, 2017; Nord, Luloff & Bridger, 1998; Zelenski et al., 2015), especially for children (Chawla & Derr, 2012; Cheng & Monroe, 2012; Collado & Evans, 2019; Evans, Otto, & Kaiser, 2018; Rosa, Profice, & Collado, 2018; Wells & Lekies, 2006). It is worth noting that while the majority of these studies only establish a correlation between exposure to nature and pro-environmental behaviors, the work by Zelenski et al., (2015) utilized a nature video in a controlled laboratory experiment to begin to demonstrate a causal relationship between nature exposure and sustainable behaviors. Cumulatively, this evidence illustrates the consensus that contact with nature is beneficial for an individual's mental health, wellbeing, and environmental actions.

Considering these psychological benefits, it is not surprising that most people indicate they prefer natural settings over built environments (Bratman, Hamilton, & Daily, 2012; Lindemann-Matthies, Junge, & Matthies, 2010; Stamp, 1996; Herzog et al., 1997). Beyond preference, however, exposure to nature is also associated with increased connectedness to nature, defined as a person's conception of how much they are a part of the natural environment (Mayer & Frantz, 2004; Schultz, 2002). An experimental study by Bruni et al. (2008) examining the effects of exposure to nature at a zoo suggest that exposure to nature can actually cause an increase in feelings of connection with nature. In fact, multiple experimental studies have found connectedness to nature to be a malleable attribute affected by exposure to nature (Schultz & Tobanico, 2007; Pennisi, Lackey, & Holland, 2017), suggesting it may be possible to increase connection over time. These findings are important since it may be possible to derive secondary benefits from connectedness to nature. For example, researchers have found an association between connection to nature, greater wellbeing (Cervinka, Roderer, & Hefler, 2011; Nisbet, Zelenski, & Murphy, 2010), and feeling like life is worthwhile (Fretwell & Greig, 2019). In fact, Mayer et al. (2009) argue that multiple benefits of nature exposure, including high attention capacity and positive emotions, may be at least partially mediated by connection to nature.

Furthermore, people with higher levels of connection to nature are more likely to feel restoration from nature exposure (Berto et al., 2018). These findings suggest providing opportunities for increased exposure to nature could heighten connectedness to nature and enhance mental health and wellbeing.

Connectedness to nature is also correlated with higher rates of pro-environmental behaviors, or actions that enable the continued enjoyment and use of nature for current and future generations (Collado & Evans, 2019; Schultz & Kaiser, 2012). Literature reviews conducted on the determinants of pro-environmental behavior agree there is significant evidence for an association between connection to nature and pro-environmental behaviors (Mackay & Schmitt, 2019), though further investigation is still needed (Li et al, 2019). Some studies have suggested connection to nature is at least one of the underlying mechanisms through which exposure to nature results in higher rates of pro-environmental behaviors (Alcock et al, 2020; Berto & Barbiero, 2017; Nisbet et al., 2010; Ives et al, 2018; Dong et al, 2020; Cheng & Monroe, 2012; Kals, Schumacher, & Montada, 1999; Nisbet et al., 2008; Otto & Pensini, 2017; Schultz et al., 2004;). However, one study found exposure to nature only increases pro-environmental behavior for those who already have a strong connection to nature (Arendt & Matthes, 2014). Despite this solitary dissenting finding, a wealth of other research suggests there is likely a positive relationship between connection to nature and pro-environmental behavior, providing a solid argument for investigating opportunities to increase connectedness to nature. Since the world is experiencing significant environmental degradation due to the actions of modern humans (Cook et al., 2003; Vlek & Steg, 2007), finding methods for changing human behavior is critical to decrease humanity's negative environmental impact and establish a sustainable society (Vlek and Steg, 2007). Therefore, understanding the determinants and consequences of enhancing connectedness to nature could be useful in addressing the global environmental crisis (Ives et al, 2018).

Some of relationships discussed above, such as the impact of exposure to nature and connection to nature on wellbeing and pro-environmental behaviors, are difficult to assess in

controlled experiments and laboratory settings because of the need for long term, regular exposure to the outdoor natural environment. Due to this limitation, it is often difficult to determine the true cause of any of the desired effects. However, strong correlations have been established by a plethora of studies and a causal relationship has been suggested by a small handful. This foundation suggests that research untangling the mechanism behind the relationships between exposure to nature, connection to nature, pro-environmental behaviors, mental health, and wellbeing is worth pursuing.

1.2 Theories Regarding the Role of Nature

The conceptual foundation regarding exposure to nature, connectedness to nature, and mental health and wellbeing have been addressed by multiple theories. Attention Restoration Theory (ART) proposed by Kaplan & Kaplan (1989) suggests that nature is a restorative environment that supports recovery of one's attention by resting executive functioning. Kaplan (1995) further explains that viewing nature encourages a "soft fascination" (p.174), or effortless attention, and enables the recovery of directed attention, a critical component to human functioning that fatigues after focusing on difficult tasks. This theory has been supported by numerous studies (Berman, Jonides, & Kaplan, 2008; Berto, 2005; Berto et al, 2018; Berto, 2014; Hartig et al., 2003). An alternative to ART, Ulrich et al. (1991) proposed Stress-Reduction Theory (SRT) which focuses on the stress-reducing benefits of nature as the means through which psychological benefits are derived. This theory argues that non-threatening nature positively changes psychological states to promote recovery from stress and that this enables better human functioning (Ulrich et al., 1991). In support of this theory, Lauman et al. (2003) found that study participants observing a nature view experienced decreased heart rates compared to those viewing an urban environment, thereby suggesting that nature is relaxing. Numerous other studies cited by Ulrich et al. (1991) also provide support for this theory.

It is possible the effects espoused by both of these theories are the result of a positive evolutionary response to nature (Berto et al., 2018), as proposed by the biophilia hypothesis. Biophilia

is defined as “the innately emotional affiliation of human beings to other living organisms” which occurs because of humankind’s evolutionary development in natural settings (Kellert & Wilson, 1993, p. 31). Originally proposed by E.O. Wilson (1984), the biophilia hypothesis argues that human beings developed a psychological need to spend time in and connect with nature. When this need is satisfied, humans experience psychological and physical benefits. While the hypothesis has been critiqued for unclear reasoning and failure to address alternate explanations (Joye & Block, 2011), generally, the benefits demonstrated in empirical research from exposure to nature suggest there is merit to Wilson’s hypothesis (Mangone et al., 2017). Overall, the literature support for each of these theories suggests that, regardless of the inner mechanisms, humans are innately inclined towards natural environments and experience psychological benefits from its contact (Joye, 2007).

One method for utilizing biophilia is to introduce the benefits from nature into the built environment through biophilic design, or design using and focusing on nature and nature-inspired elements. According to Stephen Kellert, a former professor at Yale University who co-authored “The Biophilia Hypothesis” with E.O. Wilson in 1993, biophilic design “is about creating good habitat for people as a biological organism in the built environment” (Kellert & Calabrese, 2015, p.21). Successful biophilic design enables repeated and sustained engagement with nature, focuses on environments that aid in human evolution, establishes an emotional attachment to settings, encourages beneficial interactions between people and the environment that promotes feelings of responsibility for both humanity and nature, and becomes a holistic, interconnected, and integrated design within the built environment (Kellert and Calabrese, 2015, p. 6-7).

Two predominant frameworks (see Table 1-1) have been established to organize the different aspects of biophilic design and encourage their use in the built environment. The framework most referenced by empirical researchers is Kellert and Calabrese’s (2015) Attributes of Biophilic Design, which organizes biophilic elements into three categories. The first category, Direct Experiences of

Nature, consists of aspects of nature that people can interact with and includes exposure to daylight, air, water, plants, natural landscapes, and fire among others. The second category, Indirect Experience of Nature, consists of elements that mimic nature or natural patterns and includes images of nature, natural materials, natural geometries, and naturalistic shapes and forms, among others. Their final category, Experience of Space and Place, is slightly more conceptually abstract and consists of elements that emulate the spatial characteristics of the natural environment. For example, “prospect and refuge”, or opportunities for people to have views over a long distance from a safe location, and “organized complexity”, or complex and variable but orderly elements or spaces, fall into this category. Another concept within this group is “establishing cultural and ecological attachment to place” which focuses on utilizing culturally appropriate designs and enhancing awareness of the surrounding landscape, plants, animals to encourage familiarity and affinity with a place. Each of these elements can be applied in architecture and interior design in combinations with other elements in order to create a holistic biophilic environment.

Terrapin Bright Green, a biophilic design research and consulting firm in New York City, established another framework that is popular in the professional world, the 14-Patterns of Biophilic Design (Browning, Ryan, & Clancy, 2014). This framework also organizes elements into three categories, closely aligned with the categories established by Kellert and Calabrese (2015), which further divide into patterns that can be incorporated into built environments. Terrapin Bright Green cites a variety of empirical research for each of their patterns, with the most support provided for patterns that directly expose people to nature (Browning, Ryan, & Clancy, 2014). Going forward, this research will reference the framework established Kellert and Calabrese (2015) for describing the biophilic elements utilized in this study since their framework is referenced more often in empirical literature.

Table 1-1		
<i>Comparison of Biophilic Design Frameworks – Attributes of Biophilic Design (Kellert & Calabrese, 2015) vs. 14-Patterns of Biophilic Design (Browning et al., 2014)</i>		
Category Name according to Kellert & Calabrese / <i>Category Name according to Browning et al.</i>	Attributes of Biophilic Design	14-Patterns of Biophilic Design
Direct Experience of Nature / <i>Nature in the Space</i>	<p>Physical contact with natural features within the built environment.</p> <p>Examples: light, air, water, plants, animals, weather, natural landscapes & ecosystems, fire</p>	<p>Nature physically & directly in a space.</p> <p>Examples / patterns: visual connection with nature, non-visual connection with nature, non-rhythmic sensory stimuli, thermal & airflow variability, presence of water, dynamic & diffuse light, connection with natural systems</p>
Indirect Experience of Nature / <i>Natural Analogues</i>	<p>Contact with representations or transformations of nature and exposure to nature's patterns & processes.</p> <p>Examples: Images of nature, natural materials, natural colors, simulating natural light and air, naturalistic shapes and forms, evoking nature, information richness, age/change/patina of time, natural geometries, biomimicry</p>	<p>Organic, non-living, and indirect representations of nature.</p> <p>Examples / patterns: Biomorphic forms & patterns, material connection with nature, complexity & order</p>
Experience of Space & Place / <i>Nature of the Space</i>	<p>Spatial characteristics of the natural environment beneficial to humans.</p> <p>Examples: Prospect and refuge, organized complexity, integration of parts to wholes, transitional spaces, mobility and wayfinding, cultural appropriate designs, promotion of awareness of surrounding environment</p>	<p>Spatial configurations of nature.</p> <p>Examples / patterns: prospect, refuge, mystery, risk/peril</p>

1.3 Impact of Indoor Environments

Despite the well-established benefits of exposure to nature, people in modern society spend significant time indoors, resulting in a nature deficit (Evans & McCoy, 1998; Leech et al, 2002; MacKerron & Mourato, 2013). Additionally, increasing urbanization has led to less exposure to outdoor green spaces (Zipperer & Picket, 2012), especially for individuals of low socioeconomic status (Freeman et al. 2015). Moreover, the indoor environment can significantly impact mental health and wellbeing (Evans & McCoy, 1998; McCoy & Evans, 2002; Steele, 1973). Combined, these factors suggest the built environment may be an opportune setting to provide increased equitable exposure to nature in the modern world and enhance mental health and wellbeing. In fact, researchers have suggested that bringing natural elements into the built environment results in similar psychological benefits as exposure to outdoor nature (Grinde & Patil, 2009; Joye, 2007). Therefore, investing in biophilic design may be “a sound economic investment in health and productivity, based on well researched neurological and physiological evidence” (Ramzy, 2015, p. 42). Unfortunately, modern architecture has turned away from an aesthetic that celebrates the human origins in natural environments and instead has become “a series of ill-fitting, overexaggerated, and often idiosyncratic formal architectural schemes” (Salingaros & Masden, 2008, p. 76). While this critique is over a decade old, a lack of change in architectural trends suggests it is still relevant today. In order to provide the benefits from exposure to outdoor nature, architectural and interior design must refocus on bringing nature and nature-inspired elements into the built environment through the practice of biophilic design.

Chapter 2: Literature Review

In order to fully understand the existing research on the psychological impacts of biophilic design, or design with nature/nature-inspired elements, this literature review considered a wide range of settings where empirical studies have been conducted. It has been divided into non-workplace environments and workplace environments. In this review of the literature, any elements that are part

of the frameworks in Table 1-1 that were incorporated into built environment settings were considered “biophilic design” even if individual authors did not describe it as such. Additionally, the scope of this literature review was limited to visual biophilic elements. Studies reviewed in this research included those that examined elements such as views from windows, indoor plants, wood materials, and images of nature. However, even though daylight is a visual element, it was excluded from this review because objective measurement of daylight was not possible in this study due to the remote nature of this research. Additionally, non-visual biophilic elements such as nature sounds, natural ventilation, and haptic sensations were excluded from this review. It is possible that these excluded elements had an impact on the environments studied, but including these variables was beyond the scope of this review.

One source in the review covered all settings. Gillis and Gatersleben (2015) undertook an extensive review of the psychological-focused literature regarding the health and wellbeing benefits of biophilic design as organized into the three categories identified in the framework established by Kellert and Calabrese (2015). Results indicate that there is much evidence for the benefits of Direct Experiences of Nature, but that evidence for the other categories is lacking and inconclusive. Based on their review, the authors identify three key points that effectively summarize the status of biophilic design research: (1) Biophilic design is not a one-size fits all approach, (2) more research needs to be done regarding restorative environments not related to greenery, and (3) more research needs to be done in the area of biophilic design regarding combinations of attributes and how biophilic design can work to “optimize building design” (Gillis & Gatersleben, 2015, p. 959).

2.1 Biophilic Design in Non-Workplace Environments

2.1.1 Holistic Biophilic Design in Non-Workplace Environments

Biophilic design in non-workplace settings has been studied both through examination of individual elements and holistic settings. Unfortunately, however, the literature examining biophilic design holistically is limited. This review only found three studies which fit this characterization.

Determan et al.(2019), in an exploratory study, examined a combination of views to nature, daylighting, and biomorphic patterns in an academic setting and found the biophilic design was associated with decreased student stress and higher academic performance. Furthermore, students in the biophilic setting described it as more calming and better for focus and learning (Determan et al., 2019). In a master's thesis, the authors found that an academic building with biophilic architecture enhanced connectedness to nature when compared with a non-biophilic building (Kahl & Mayer, 2016). Finally, one study concerning a non-workplace, holistic biophilic environment found that exposure to an indoor nature exhibit for between 15 and 60 minutes can increase connectedness to nature even without interpretive signage (Pennisi et al., 2017). The lack of interpretive signage suggests that it was the interior nature itself which facilitated the change. However, since this was an exhibit and not a traditional indoor space, the results are only tangentially related to this review.

2.1.2 Individual Biophilic Elements in Non-Workplace Environments

Researchers have studied individual elements of visual biophilic design much more substantially in non-workplace settings. In relation to the previously described framework established by Kellert & Calabrese (2015), these studies generally focused on Direct Experiences of Nature such as views and indoor plants, and Indirect Experiences of nature including wood and images of nature. No studies were found regarding Experiences of Space and Place. Views to outdoor nature most consistently demonstrated positive benefits. For example, views of natural elements in the built environment have been associated with enhanced creativity (McCoy & Evans, 2002), greater thermal comfort (Ko et al., 2020), more positive emotions or wellbeing (Ko et al., 2020; Kaplan, 2001), greater ability to concentrate (Ko et al., 2020), faster recovery from stressors (Li & Sullivan, 2016), and higher satisfaction with the physical environment (Kaplan, 2001). Views from the indoors out to natural environments have also been associated with improvements on focus-requiring tasks & directed attention (Lee et al., 2015; Li & Sullivan, 2016; Tennessen & Cimprich, 1995). In school settings, views

to natural environments correlate with positive perceptions of courses, better academic achievement, and lower incidences of criminal behavior (Benfield et al., 2015; Matsuoka, 2010;). Finally, in one of the earliest and most cited studies examining views of nature, Ulrich (1984) found that individuals in a hospital with a view to nature who had undergone gall bladder surgery were able to recover faster, had fewer negative comments in nurses' notes, and took fewer pain relievers than those with a view to a brick wall. Collectively, these findings present overwhelming evidence that views to nature provide significant psychological benefits.

The presence of wood materials in the indoor environment is also associated with psychological benefits, such as stress reduction (Fell, 2010; Sakuragawa et al., 2005; Tsunetsugu, Miyazaki, & Sato, 2007) and enhanced creativity (McCoy & Evans, 2002). It is also very positively received by occupants, described as warm, natural, relaxing, friendly, and inviting and thought to be a positive influence (Rice, 2004; Sakuragawa, 2005). However, it is important to note that more wood in an interior environment is not necessarily correlated with increased positive impacts. One study found that rooms with approximately 45% wood were considered the most comfortable while rooms with 90% wood materials were overstimulating (Tsunetsugu, Miyazaki, & Sato, 2007).

Unlike views to nature and natural materials, the literature on the psychological impact of indoor plants provides mixed results, indicating the relationship is complex (Adachi et al., 2000; Bringslimark et al., 2009), and possibly differs according to gender or other individual variances (Shibata & Suzuki, 2002; Shibata & Suzuki, 2004). One study in an academic setting found that plants had no statistical effect on academic performance, but they increased positive ratings of the course and instructor performance (Doxey et al., 2009). However, Bringslimark et al.'s (2009) literature review on the psychological benefits of indoor plants indicated that "indoor plants can provide psychological benefits such as stress reduction and increased pain tolerance" (p.431) but the variety of methodologies used in the reviewed sources makes it impossible to generate generalized claims about other effects.

Only one study that examined images of nature in the built environment was reviewed. McCunn & Frey (2020) studied a large-scale mural and found it had no impact on productivity, wellbeing, attention restoration, or work satisfaction. However, the lack of results could be because the survey in this study was administered retroactively without pre-installation data or because the murals were located in corridors where individuals experienced only intermittent exposure (McCunn & Frey, 2020). Additionally, many studies have used photographs of nature in their research and demonstrated beneficial psychological impacts (Arent & Matthews, 2014; Berman et al., 2008; Berto, 2005; Brown et al., 2013; Gatersleben & Andrews, 2013; Kjellgren & Buhrkall, 2010; Mayer et al., 2009; Ryan et al., 2010; Scopelliti et al., 2019; Zelenski et al., 2015). Although these images were not incorporated directly into the built environment, their use and positive results suggests that it might be possible to use nature images as a proxy for real natural settings and incorporate them into the built environment for psychological benefit. It is worth noting that some of the photographs of built settings used for comparison in these studies are noticeably unattractive settings, which may have affected the results.

Overall, the research on biophilic design in non-workplace settings suggests that views to natural environments and the presence of natural materials are likely beneficial to mental health and wellbeing. Unfortunately, the research on indoor plants and images of nature is currently inconclusive and the topics require further investigation.

2.2 Biophilic Design in the Workplace Environment

While incorporating biophilic design may provide opportunities for significant benefits in all built-environment settings, the inclusion of nature and nature-like elements into workplace environments is especially critical. Office employees spend the majority of their time at the workplace when outside the home (Dreyer et al., 2018; Leech et al, 2002; Schweizer et al., 2007). Additionally, workplaces are the source of much of a person's life stress (Dreyer et al., 2018; Aries et al, 2010) and are considered a highly important setting to promote wellbeing (Oldenburg et al., 2002; Shain and

Kramer, 2004), especially depending on how well the physical environment meets the needs of the occupant (Dreyer et al., 2018; Moser, 2009; Weden et al., 2008; Wright and Kloos, 2007). These effects can indirectly influence the productivity of an organization by affecting the individuals who contribute to the overall organization's performance (Aries et al., 2010; Veitch et al., 2004). In fact, because many employers believe that their workspaces impact employee wellbeing, and consequently, their bottom line, biophilic design in office spaces has grown in popularity (Curry, 2019). Terrapin Bright Green argues that since "human costs are 112 times greater than energy costs in the workplace", using biophilic design in the built environment is a "sound economic investment in health and productivity" (Browning, 2015, p.14). Hence, because of the clear importance of the setting, the research regarding workplace environments has been broken-out from other settings and is reviewed on its own.

2.2.1 Holistic Biophilic Design in Workplace Environments

Similar to non-workplace environments, workplaces have been studied both as holistic biophilic environments and through investigation of individual biophilic elements. Holistic examination of the environment may prove to provide a more thorough understanding of the overall impact of biophilic design. In fact, Dreyer et al. (2018) found that while a view to the outdoors was an important predictor of wellbeing, it was not a unique predictor and should be considered in conjunction with the rest of the indoor environment. Furthermore, when combined, views and plants seem to enhance the potential psychological benefits of the individual elements. In fact, one study found that when the presence of indoor plants is combined with views of nature, individuals experience the highest levels of job satisfaction and quality of life when compared to either factor alone (Dravigne et al., 2008). Additionally, Chang & Chen (2005) found that a window with a view of nature combined with the presence of indoor plants resulted in the highest brainwave activity and lowest anxiety level out of the six possible window/plant combinations that they studied. These results suggest a holistic biophilic office environment that combines elements of biophilic design may be the most beneficial for workers.

When examined as holistic environments, indoor biophilic design has been found to increase positive wellbeing and reduce negative wellbeing (Dreyer et al., 2018; Gullikson, 2010; Sanchez et al., 2018), lessen stress (Largo-Wight et al., 2011; Yin et al., 2020), associate with perceived restoration (Nejati et al., 2016), reduce fatigue, improve performance, and enhance creativity (Sanchez et al., 2018). For example, a longitudinal study conducted by Gray & Birrell (2014) examined the effects of a biophilic design installation on employees of a site office. Data collected three weeks after the intervention indicated the employees felt a boost in productivity and collaboration, less stress, and enhanced wellbeing due to the presence of biophilic design elements. Data collected again two years after the installation continued support for the early findings and indicated that workers felt the biophilic design elements made the workplace more enjoyable and social, reduced their stress, and made them more creative (Gray, 2018). Another study found that contact with nature during work was also associated with higher perceived organizational support. This perception of support was found to mediate the relationship between the presence of biophilic design and reduced job stress, fewer mental health complaints, and fewer sickness absences (Bjørnstad & Raanaas, 2015). Collectively, the research on holistic biophilic work environments suggests that the benefits from exposure to nature in the outdoor environment can be experienced from exposure to nature in the indoor workplace as well.

Contrary to most of the literature, however, McCunn and Gifford (2012) examined biophilic design in the workplace and found a negative relationship with positive impressions of the office and no relationship with environmental attitudes and engagement. The authors suggest several plausible reasons for this unexpected result, including disallowed personalization creating frustration among employees, issues due to timing of the intervention, and limitations of weighting green design attributes in their survey instrument (McCunn & Gifford, 2012). Similarly, Gritzka et al. (2020) conducted a literature review that also found less definitive results than most of the individual studies. Their review of ten studies in biophilic workplaces with real employees and controlled trials found positive impacts

on mental health in all studies, but mixed results for recovery, restoration, and work and life satisfaction. They further noted that all of the reviewed studies demonstrated a fairly high risk of bias including a variety of issues such as cross contamination between intervention and control groups, lack of objectivity in measurements, lack of blinding in the studies that could lead to feelings of resentment in the control group, inconsistencies in the measurement tools, and poor retention, which means the findings should be viewed cautiously (Gritzka et al., 2020).

2.2.2 Individual Biophilic Elements in Workplace Environments

Like non-workplace settings, more studies have been conducted on individual biophilic elements in the work environment than on holistic settings. In relation to Kellert and Calabrese's (2015) framework, the majority of these studies focused on Direct Experiences of Nature through views to the natural environment or indoor plants, although three studies were found on biophilic attributes in the category of Indirect Experiences of Nature. Similar to non-workplace environments, no studies were found regarding Experiences of Space and Place. Again, views to the outdoors are the biophilic element most consistently found to be a highly important factor for deriving positive benefits from the workplace environment (Leather et al., 1998). In fact, workers without views in their spaces have been found to be five times more likely to bring plants into their workspace and three times more likely to bring in images of nature to compensate for the lack of a view (Bringslimark et al., 2011). Studies have suggested that views to the outdoors are consistently preferred over views to the built environment (Farley & Veitch, 2001), and are significantly related to reduced anxiety and stress (Chang & Chen, 2005; Leather et al., 1998; Shin, 2007;), higher satisfaction with environmental conditions (Aries et al., 2010; Jamrozik et al., 2019; Ozdemir, 2010; Yildirim et al., 2007), greater wellbeing (Esch et al., 2019; Gilchrist et al., 2015; Leather et al., 1998), positive job satisfaction (Finnegan & Solomon, 1981; Leather et al., 1998; Lottrup et al., 2013; Shin 2007), improved cognitive functioning (Jamrozik et al., 2019), and restoration (Kaplan, 1993). One study suggested that greater amounts of nature in views is associated

with greater wellbeing, even though all views, even those of built environment settings, can have positive effects (Esch et al., 2019). On the other hand, at least one study has suggested that views of human-built objects are not related to wellbeing and, consequently, the built environment needs to contain views to nature in order to improve wellbeing in urban environments (Gilchrist et al., 2015). As a whole, these findings regarding views to nature align with the conclusions from research in non-workplace settings and further support the effectiveness of views to nature positively impacting mental health and wellbeing a manner similar to exposure to outdoor nature.

The literature regarding indoor plants in office spaces presents mixed results on their impact on human psychology. For example, the presence of plants in workplace environments has been associated with higher levels of job satisfaction and quality of life (Dravigne et al., 2008) as well as positive mood, comfort and perception of the office space (Larsen et al., 1998; Nieuwenhuis et al., 2014; Smith et al., 2011; Thomsen et al., 2011) and reduced sick leave (Bringslimark et al., 2007). Individuals have also been found to experience reduced stress, anxiety, depression, anger, fatigue, confusion, and discomfort when around plants (Burchett et al., 2010; Chang & Chen, 2005; Fjeld et al., 1998; Lohr et al., 1996). However, Thatcher et al. (2020) conducted a series of studies which suggest the psychological benefits derived from plants in laboratory settings could not be replicated in real-work field settings. Furthermore, Shoemaker et al., (1992) performed a study where the presence of plants in the office environment was found to have no effect on behavior, attitude, or workplace satisfaction. However, it is worth noting that only fourteen respondents completed all portions of this study.

The effect of plants on productivity is unclear. Multiple studies have suggested that the presence of indoor plants is associated with increased productivity (Bringslimark et al., 2007; Smith et al., 2011), possibly due to decreased stress when performing stressful tasks (Lohr et al., 1996) or because of increased concentration (Nieuwenhuis et al., 2014). However, Larsen et al., (1998) found in a laboratory study that the presence of plants decreased productivity, though the researchers suspect

this may be because productivity was measured with a repetitive task rather than one which required creativity. The real effects of people-plant relationships are likely affected by a variety of factors including workplace characteristics, how the plants were used, the characteristics of the plants, and the characteristics of the employees (Thomsen et al., 2011). Overall, these findings suggest that indoor plants seem to have potential positive benefits, but additional research needs to be conducted with standardized methods and measures in order to understand the complex relationship between the presence of plants in workplace environments and the resultant effects on workers.

Finally, the literature review included a few limited studies on Indirect Experiences of Nature in the workplace. Only one study was found regarding the impact of nature images. Kweon et al. (2007) examined the impact of nature posters and abstract posters on anger and stress in an office-like laboratory setting. The highly conflicting results indicate that the posters had a strong anger and stress-reducing effect for males, but not females, regardless of what kind of poster was in the room. (Kweon et al., 2007). Since this was a singular study with a small sample and unusual results, more evidence regarding the impact of images of nature in office settings relative to genders is needed. More definitively, results from a recent study that utilized a computer-rendered, simulated, virtual reality (VR) representation of a biophilic office environment found that occupant responses to the VR environment were nearly identical to those experienced in the actual environment (Yin et al., 2018). This suggests representations of nature actually may be effective in imparting benefits to office workers.

One study that also investigated indirect experiences of nature found that wood materials in a workplace setting demonstrated positive psychological benefits. Shen et al., (2019) compared the effect of four interior rooms (concrete, dark brown wooden, light brown wooden, and 50% white-painted wooden) on occupant preference and cognitive performance. Results of the study indicated participants experienced better task performance in the wooden rooms over the concrete room. Furthermore, participants' self-reports indicated they felt increased attention in and high preference for the wooden

rooms (Shen et al., 2019). Based on these findings, the authors suggest that wooden interiors may be beneficial for attention restoration or other cognitive effects when natural outdoor environments are not available. Similarly, one study was reviewed regarding artificial skylights, which simulated the visual appearance and light of the natural atmosphere, sky, and sun (Canazei et al., 2017). A rather remarkable product that mimics a real skylight so effectively that the researchers conceded the participants may have mistaken it for the real thing, this artificial skylight was found to improve participant's mood states, reduce tension and anxiety, and make the room feel livelier and less tense (Canazei et al., 2017). Although this is the only study that has been conducted on such a product, the potential for positive benefits for workers is evident. Finally, one study was reviewed that described the use of fractal patterns, which purportedly have positive impacts on performance on visual tasks and stress reduction (Taylor et al., 2018), to create carpets for office environments (Smith et al., 2020); however, the effect of these carpets on office workers has yet to be empirically tested.

Collectively, this research suggests that incorporating biophilic design into workplace environments has the potential for improving employee mental health, wellbeing, and other psychological factors. Although the research on indoor plants is inconclusive and the research on indirect experiences of nature is limited, the research on views to nature and holistic biophilic environments makes a strong case for the benefits of biophilic design. However, it is worth noting that many of these studies had slightly small samples and were only able to demonstrate correlational results rather than make causal statements. Because of this, there is no definitive evidence that biophilic design in workspaces causes improvements to psychological health. Additional experimental research on the effects of biophilic design in workplace environments on the mental health and wellbeing of employees is warranted, especially studies with large populations. Furthermore, the reviewed studies were limited to office environments or labs simulating office-conditions. There is a major gap in the research in that no one has studied biophilic design in work-from-home environments.

2.3 The Work-From-Home Environment

2.3.1 *Existing Research on the Work-From-Home Environment*

The work-from-home environment presents a unique setting for studying the psychological effects of the physical environment on a worker. The body of literature studying this topic uses a variety of terms to describe the condition of working from home including telecommuting, remote working, distributed working, flexible working, and distance work (Allen et al., 2015). Telecommuting may also take place in a variety of places – trains, cars, airplanes – however, the home is the most common alternative to the office (Felstead et al., 2005). In this study, we will use the term “work-from-home” to describe the concept of an individual worker performing paid duties at home (full or part-time) that are traditionally conducted in an office. The physical workplace where this is conducted will be referred to as the “work-from-home environment.” This includes both home offices that may be a permanent location or separate room as well as temporary work locations such as a kitchen table.

Multiple studies in the decade prior to 2019 found that the number of people working from home either full or part-time is increasing (Allen et al., 2015; Oettinger, 2011), suggesting that researching this setting is especially important. Unfortunately, the existing literature regarding the impacts of working from home on wellbeing, stress, performance, and job satisfaction present highly mixed results. Allen et al. (2015) found in their literature review that even though work from home is associated with social and professional isolation, it is also correlated with increased job satisfaction and increased autonomy. However, another study found little support that working from home leads to increased job satisfaction (Bélanger, 1999). Some studies have also suggested that working from home is associated with higher levels of wellbeing (Anderson et al., 2014; Bloom et al., 2015;), but that it depends on individual characteristics such as willingness to engage in social activities outside of work (Anderson et al., 2014). Others find that it is the autonomy and control that enables greater flexibility and ultimately results in increased wellbeing (Allen et al., 2015; Kossek et al., 2006; Kemerling, 2002).

On the other hand, the findings from one study suggest that teleworking is associated with more stress, which impedes wellbeing, but that this varies greatly depending on gender and parental status (Song & Gao, 2019; Sullivan, 2012; Weinert et al., 2015). The findings on job performance are also mixed. One study found there does not seem to be a significant difference in performance in working from the home vs. the office (Belanger, 1999). However, in their review, Allen et al. (2015) found studies that cited that working from home resulted in lower job performance as well as studies that cited higher job performance. Overall, the impacts of working from home on wellbeing, satisfaction, performance, and stress likely depend on a variety of personal and environmental factors and are still not well understood (Allen et al., 2015).

Working from home also has impacts on family life that could affect an individual's feeling of wellbeing. There is little empirical support for the concept that telecommuting decreases work-family conflict (Allen et al., 2015). In fact, some studies have suggested that working from home is associated with work having a negative impact on work /family relations and work life balance (Allen et al., 2012; Bailey and Kurland, 2002; Johnson et al., 2007; Nakrošienė et al., 2019). For example, not being able to provide adequate privacy and separation between work spaces and family spaces could result in conflict in the home (Magee, 2000). However, one study suggested telecommuting enables a better work-life balance when males work from home because it enables a more equitable distribution of household responsibilities in heterosexual couples (Dockery & Bawa, 2017). Again, the findings from the literature are mixed and demonstrates that the topic bears further investigation.

Unfortunately, little is known about the physical environment of most work-from-home spaces or how these conditions affect workers (Fan Ng, 2010). Studies have found that having a suitable space within the home that fits their needs is an important factor for successful telework (Fan Ng, 2010; Nakrošienė et al., 2019). However, what physical aspects make up a suitable working place is unclear. Given the abundance of literature highlighting the possible positive impacts of nature in traditional

office work environments, it seems likely that including nature in work from home spaces through biophilic design may have positive benefits for workers and contribute towards creating a suitable workspace. Unfortunately, as previously mentioned, no known studies have been conducted on biophilic design in the work-from-home environment.

2.3.2 The COVID-19 Pandemic

The critical importance of the psychological impacts of work-from-home environments has been highlighted by the 2019 outbreak of COVID-19. By early 2020, this virus had reached Europe and the United States and quickly became the first major global pandemic since the Spanish Flu in 1918. Much of the United States and Europe “shut-down” to prevent further spread of the virus. This shut-down, which extended for over a year in various forms, included millions of people suddenly working from home full-time and remaining in their dwellings when not conducting essential activities such as purchasing food. A study conducted in China, where the virus originated and where the first shut-downs began to take place, found that the outbreak was a significant disruption to life and work and was associated with negative impacts on mental health, life satisfaction, and wellbeing (Zhang et al., 2020). The outbreak also led to separation from exposure to others, thereby potentially increasing isolation and loneliness, which can have a significant negative impact on wellbeing (Lyubomirsky et al., 2005). Emerging literature suggests that access to greenspace and views of nature may be able to mitigate some of these negative psychological impacts of the COVID-19 pandemic and increase levels of self-esteem, life satisfaction, and happiness (Soga et al., 2020). As the world population increases and climate change grows more severe, it is possible that COVID-19-like pandemics, severe weather events, or other natural disasters will occur frequently and force individuals to work from home. Thus, it has become even more critically important to understand opportunities for increasing an individual’s exposure to both outdoor and indoor nature.

The COVID-19 pandemic has also brought into question the future of work environments. The pandemic forced employers to transition entire companies to remote work while still remaining profitable. This skyrocketed the number of individuals working from home regularly and caused employers to question the need for brick-and-mortar work environments. While it seems unlikely that office-like business establishments will disappear entirely, the post-COVID future may see them reduced in quantity and capacity while employers encourage employees to occasionally work from home. With this in mind, it is necessary for the future of our society to understand the potential for work-from-home environments to support employees' mental health and ability to work effectively.

Finally, it is worth noting that work-from-home research conducted prior to the COVID-19 pandemic may have suffered from self-selection bias since individuals likely chose to work from home. Contrary to this, the pandemic created singular research conditions in which individuals who may not have typically chosen to work remotely were suddenly forced to work from home, thereby reducing self-selection bias and providing a unique opportunity for research to focus on the work-from-home environment. However, this also means that research conducted during the COVID-19 restrictions may not be entirely applicable to non-pandemic time periods.

2.4 Conclusion

As a whole, this body of literature suggests that exposure to outdoor nature has positive effects on mental health and wellbeing and bringing nature indoors may result in similar benefits, which are especially critical in workplaces. Therefore, biophilic design in the work-from-home environment might create healthy, suitable spaces for employees in this modern era of increased telecommuting.

Chapter 3: Research Questions & Hypothesis

There is a significant gap in the literature regarding the potential impacts of biophilic design in the work-from-home environment. This research begins to address that gap. This study examines biophilic design elements in people's home workspaces and their correlational relationship with

wellbeing and connection to nature. Furthermore, this study also examines people's perception of the effectiveness of individual visual biophilic elements in their ability to increase connection to nature, relaxation, and cheerfulness. With this in mind, this study poses two research questions:

1. Is a greater presence of biophilic design in the home workspace associated with higher feelings of wellbeing and connectedness to nature for professionals working from home?
2. What visual biophilic design elements are perceived by professionals working from home to be the most effective for increasing wellbeing and connection to nature?

Based on the previously mentioned findings that exposure to outdoor nature is associated with greater wellbeing and connectedness to nature and that biophilic design in the built environment can have similar psychological benefits as exposure to outdoor nature, we propose the following hypotheses:

Hypothesis 1 – There will be a main effect of biophilic design elements in the work-from-home environment on wellbeing. A greater presence of biophilic design will be associated with higher levels of wellbeing.

Hypothesis 2 – There will be a main effect of biophilic design in the work-from-home environment on connectedness to nature. A greater presence of biophilic design will be associated with higher levels of connectedness to nature.

Additionally, based on the reviewed literature that suggests direct experiences of nature, such as views to natural landscapes and exposure to indoor plants, have the most potent effects on human psychology, we also propose the following hypotheses:

Hypothesis 3 – Biophilic elements that enable direct experiences of nature will be rated as more effective at connecting people to nature than biophilic features that enable indirect experiences of nature.

Hypothesis 4 - Biophilic elements that enable direct experiences of nature will be rated as more effective at enhancing relaxation than biophilic features that enable indirect experiences of nature.

Hypothesis 5 - Biophilic elements that enable direct experiences of nature will be rated as more effective at enhancing cheerfulness than biophilic features that enable indirect experiences of nature.

Overall, if the presence of biophilic elements in work-from-home spaces is associated with higher levels of wellbeing and connectedness to nature, then individuals and companies should work to incorporate those elements into their spaces to potentially provide positive benefits. Additionally, understanding which biophilic elements are perceived to be the most effective will be beneficial for deciding which elements are most critical to incorporate into work spaces.

Chapter 4: Methods

4.1 Overview

To explore the established research questions, this study sought to investigate four key variables: (1) connection with nature, (2) wellbeing, (3) amount of biophilic design, and (4) type of biophilic element. Connection to nature and wellbeing were operationalized with established scales from the literature review. The amount of biophilic design in the work-from-home workspace was assessed through analysis of photographs of work-from-home workspaces. Finally, type of biophilic element was assessed through comparisons of digital renderings depicting imagined workspaces with different biophilic elements.

The structure of this study consisted of two phases: a survey, which included self-report questions as well as the collection of photographs, and interviews. This use of multiple methods provides a more holistic understanding of the research topic through the combination of both quantitative and qualitative methods (Betzner et al., 2016; Venkatesh et al., 2013). Additionally, multiple

methods are useful in social science research to address the limitations associated with a single method approach when a controlled experiment is not possible (Caballero, 2013). In the reviewed literature, several studies made use of multiple methods, including questionnaires, physical environmental measurements, collection of objective performance data, and biometrics (e.g., Doxey et al. 2019; Largo-Wight et al., 2016; Sanchez et al., 2018). Only Thomsen et al. (2011), however, made use of both interviews and surveys, among other methods, in order to investigate the employee attitudes towards plants in the workplace and the associated effect on wellbeing.

In this study, Phase 1 consisted of an online survey which gathered data via two methods: (1) a self-report questionnaire and (2) collection of photographs of the respondent's work-from-home workspaces. Additionally, in this survey, participants indicated whether or not they wished to participate in follow-up interviews. Phase 2 consisted of these follow-up interviews conducted over the internet via video conferencing software. Interview questions sought to discover more in-depth information regarding individuals' feelings about the physical elements in their work-from-home spaces and how this is associated with their connection to nature and wellbeing. Thus, the interview questions aligned with, and enhanced, the survey questions but did not repeat questions already asked in the survey. Phase 2 took place prior to the analysis of data from Phase 1 in order to prevent researcher bias during the interview. Both phases are explained in more detail in the following section.

This study was conducted in cooperation with an architecture and engineering firm with 10 offices in the United States, half in the mid-west and half on the coasts. This firm has no direct financial interest in the study, however, they willingly provided access to a work-from-home population from which the study sample was drawn. This cooperation occurred for three reasons: (1) The primary researcher is employed part time with the firm to conduct sustainable design certification work. However, this work is not associated with the study at hand and the researcher was not paid to conduct this study. (2) The firm requested some of their own questions about workplace satisfaction to be

included in the study. The company received the aggregate results of the data after it had been analyzed but did not receive any raw data. Finally (3), the information gleaned by this study is relevant to the architectural design work conducted by the firm and could inform their design practices as well as their efforts to support their work-from-home population.

4.2 Phase 1 – Online Survey

Based on the reviewed literature and an established precedent of utilizing surveys to assess wellbeing, connection to nature, satisfaction with working environments, and other psychological reactions to environments with biophilic elements (e.g., Bjørnstad & Raanaas, 2015; Dreyer et al, 2018; Gilchirst et al., 2015; Largo-Wight et al, 2011; Lottrup et al., 2013; Nejati et al., 2016; Shin, 2007), a survey questionnaire was developed with the software, Qualtrics, and administered online in order to assess employees' work-from-home workspaces, feelings of wellbeing and connection to nature, and perceptions of the effectiveness of different visual biophilic design elements.

The survey tool was pilot-tested with a four-person group in order to determine the time frame needed to administer the tool and to verify that subjects could understand the questions and tasks. Based on the feedback from this pilot test, small adjustments were made to the wording of questions and the instructions for uploading photographs were presented in a graphical format rather than with large sections of text.

4.2.1 Participants

Participants were recruited for the survey via an email letter that was distributed to every employee of the architecture firm via a company-wide email address. In addition to this email, a video of the researcher explaining the study and requesting participation was posted on the company's internal website. This recruitment method reached a pool of approximately 850 firm employees from departments including architecture, interior design, engineering, human resources, technology services, and administration. Participants were offered the chance to receive one of four \$75 gift cards to a large

online retailer for successful completion of the survey. Additionally, participants were guaranteed they could view the aggregate results of the data from the survey in order to inform their professional work and the design of their personal work-from-home spaces. All study participants took part in all portions of the survey questionnaire. Individuals experiencing a furlough due to financial cut-backs within the firm were excluded from the study.

4.2.2 Instrument & Procedure

The survey questionnaire included evaluation of digitally developed representations of work-from-home workspaces as well as a self-report assessment of connectedness to nature, wellbeing, and workplace satisfaction. The survey tool also included an opportunity for respondents to upload photographs of their work-from-home workspace. The survey consisted of eight sections: (1) set-up questions, (2) an opportunity to upload photographs of the work-from-home workspace, (3) assessment of satisfaction with working environment, (4) evaluation of rendered biophilic work-from-home environments, (5) the Connectedness to Nature Scale (see section A.2 of Appendix A for original), (6) the Warwick-Edinburgh Mental Wellbeing Scale (see section A.1 of Appendix A for original), (7) background demographic information questions, and (8) an opportunity for additional feedback. The total survey was expected to take participants approximately 20-25 minutes.

The set-up questions required respondents to be located in their work-from-home workspace during the daytime in order to proceed with the questionnaire. Additionally, the set-up section only allowed individuals who were not experiencing a furlough to continue with the questionnaire in order to prevent this life-stressor from impacting the study.

After establishing these basic requirements, individuals were asked to upload photographs of their work-from-home workspace once all possible personal identifiers were removed from the area. Respondents were requested to upload five photographs that covered a 180-degree view centered around their computer work station – 90 degrees to the left, 45 degrees to the left, front, 45 degrees to





the right, and 90 degrees to the right. This systematic method provided a panoramic view of the environment experienced by each respondent.

Following this process, respondents indicated their satisfaction with the quality of their work-from-home environment. These questions were included at the request of the firm that collaborated with the researcher on the study. The aggregate data from these questions will be compared to data previously collected by the firm in a separate study.

Next, the survey asked respondents to evaluate how effectively digitally manipulated renderings of an imagined work-from-home environment enabled feelings of connection to nature and wellbeing, described as relaxation/calmness and cheerfulness. As argued by Nejati et al. (2016), since humans predominantly assess their physical environment with visual stimuli, the rating of renderings is an effective method for evaluating an environment non-verbally. Additionally, in accordance with the technique utilized by Nejati et al. (2016) and findings from Rodiek (2004) and Sheppard (1989), in order to establish valid evaluation of the biophilic element in each image, the renderings presented simple, believable, easy to understand representations of a work-from-home environment and only varied according to the relevant biophilic element being assessed. Each image presented the same simple work-from-home space that included white and light gray materials, a desk, a chair, a computer monitor, and a small amount of miscellaneous items on the desk. Types of biophilic elements varied between the images to show eight options: (1) no biophilic elements, (2) a window with a view to an urban street with historic buildings, (3) a window with a view to a green backyard, (4) indoor potted plants, (5) a green-plant wall, (6) a wood textured wall, (7) a painting of a nature scene, and (8) vine-patterned wall paper. See Table 4-1 for the renderings of imagined work-from-home workspaces.

Table 4-1

Imagined Work-From-Home Workspaces

Description	Image
1. No biophilic elements (no experience)	
2. Window with a view to an urban street with historic buildings (direct experience)	
3. Window with a view to a green backyard (direct experience)	
4. Indoor potted plants (direct experience)	

5. Green-plant wall
(direct experience)



6. Wood textured wall
(indirect experience)



7. Painting of a nature scene
(indirect experience)



8. Vine-patterned wall paper
(indirect experience)



After assessing the images, study participants responded to two established scales regarding connectedness to nature and wellbeing. First, the Connectedness to Nature Scale (CNS) by Mayer & Frantz (2004) was used to evaluate affective feelings of connectedness to nature. This scale has a high

test-retest reliability, high internal consistency, has been found to be predictive of behavior, and was also successfully utilized by Pennisi et al., (2017) in their study regarding connection to nature in an immersive exhibit. It was used over other scales because it seeks to measure an “affective, experiential connection to nature” (p.504), which most closely assesses feelings that lead to pro-environmental behaviors (Mayer & Frantz, 2004). After this scale, respondents took the Warwick Edinburgh Mental Wellbeing Scale (WEMWBS), which measures a wide range of positive mental wellbeing constructs, including affective-emotion, cognitive-evaluative, and psychological functioning (Tennant et al., 2007). This scale has a high Cronbach’s alpha score of 0.91 when used with a general population and a test-retest reliability of 0.83. In biophilia literature, it has been used in a study conducted by Gilchirst et al. (2015) on the impacts of access and views to greenspaces from workplaces. It was used over other scales because it focused on a broad interpretation of wellbeing and was intended for use with health promotion initiatives (Tennant et al., 2007). This aligned with assessing biophilic design interventions.

Finally, the body of the survey closed with a section of “background” questions that established typical demographic information, position and experience at the firm, number of children and pets, and typical weekly exposure to outdoor nature. At the end, respondents were provided with an opportunity to note any additional feedback on the survey, if desired, as well as to indicate whether they would like to participate in a follow-up interview. Upon completion of the survey, respondents were offered the opportunity to enter into a drawing to win a gift card. If participants indicated yes, then the online survey routed to a separate survey where information could be input for entry into the drawing. This completely disassociated each individual’s identity from their responses on the survey except for those who indicated they wished to be interviewed. For a complete paper copy of the survey tool, please refer to section A.3 of Appendix A.

The online survey was available to participants for three weeks. In order to encourage participation, reminder emails about the survey were sent once per week as well as on the final day of

the survey. Upon the closure of the survey, the raw data from was downloaded from Qualtrics. Winners of the four gift cards were then randomly selected using an online random number generator.

4.2.3 Data Analysis

The data collected in the survey was cleaned and processed using excel and then analyzed using R within RStudio, Version 1.3.1073 (R Core Team, 2020). Analysis methods were determined by the research questions and the associated variables of focus. Additional analysis was performed throughout to determine if any moderating variables affected the results.

Only data from individuals who submitted images of their work-from-home workspace were included in the analysis for Hypothesis 1 and 2. These two hypotheses were tested through examination of the relationship between the amount of biophilic design within each workspace with each participant's score on the Warwick Edinburgh Mental Wellbeing Scale (Hypothesis 1) and the Connectedness to Nature Scale (Hypothesis 2).

The photographs of people's work-from-home spaces were analyzed to determine a score for amount of biophilic design in each workspace through ratings by experienced designers, environmental psychologists, and graduate students. Purani and Kumar (2018) utilized ratings by expert judges in order to select images of biophilic and non-biophilic settings for use in their study on the restorative psychological effects of biophilic elements in service settings. Similarly, in their study on how window views affect the perception of room, Ozdemir (2010) established the naturalness and openness of window views in images of offices through rating assessments performed by both experts and students. Finally, Esch (2019) analyzed the amount of nature as well as naturalness of 104 photographs through ratings by psychology graduate students after establishing a frame of reference. Their process identified sixteen photographs which were then used in their study on window views and employee wellbeing.

Based on these examples, this study made use of judges to establish a rating representing the amount of biophilic design in each work-from-home workspace. First, frame-of-reference images were

established for comparison to the work-from-home workspace photographs. Three national experts in biophilic design ranked a series of five renderings created by the researcher according to the amount of biophilic design. Due to comments by experts, a wood pattern originally used in the rendering was altered from a herringbone plank pattern to a less complex wood sheet. All three experts agreed on the images used to represent scores of 1 and 5, and two of the three experts agreed on the image used to represent a score of 3. These three frame-of-reference images, representing a scores of 1, 3, and 5, established a common baseline for measuring the amount of biophilic design and were provided to judges to assess the images of work-from-home workspaces (see section A.4 of Appendix A).

Next, the five photographs provided by each survey respondent were placed side-by-side and combined into a single panoramic image of each work-from-home workspace. Data from two participants were excluded from this analysis because they did not submit images. This resulted in 86 images (see section B.2 of Appendix B) which were then divided into three groups. One image was then selected from each group and added to the other two groups, thus placing three images of the same images in all three groups. This resulted in one group of thirty images and two groups of thirty-one images. Fifteen judges were selected consisting of graduate students, post docs, and faculty from the Design and Environmental Analysis Department at Cornell University who are familiar with biophilic design. Five judges were randomly assigned to each group of images and then asked to rate the amount of biophilic design in each image on a sliding scale of 1 to 5 with 1 being very low to no biophilic design and 5 being very high biophilic design.

After viewing the frame-of-reference images, judges then rated the workspace panoramas through an online survey platform. Based on the mean of these judges' scores, an overall score for amount of biophilic design was generated for each image. The Intra-Correlation Coefficient within each group of images of work-from-home workspaces were calculated based on a single-rating, absolute-agreement, 2-way random-effects model (Koo & Li, 2016) in order to determine the amount of

consensus between the raters within each group. Upon determination of sufficient reliability, this numeric score was then used in the subsequent analysis with the rest of the survey data. Additionally, all of the collected images were grouped by score into three categories: low (score from 1 up to 2), medium (score from 2 up to 3), and high (score from 3 up to 5). These categories were selected because there was only one score above a 4. Consequently, images scored in the 4-5 range were combined with those in the 3-4 range to create the “high” group. Both the original continuous numeric scores and the grouped scores were used in subsequent analysis.

A Cronbach’s alpha was calculated for both the Warwick Edinburgh Mental Wellbeing Scale (WEMWBS) and the Connectedness to Nature Scale (CNS) to test the internal consistency. Once consistency was established, the scores for each scale were determined. The score for each participant was calculated for the WEMWBS scale according to the method established by Tennant et al. (2007): the response for each item was summed together, resulting in an overall total score for each individual. Thus, a higher score indicates a higher level of mental wellbeing (Tennant et al., 2007). The score on the CNS for each participant was calculated according to the method established by Mayer & Frantz (2004): the responses for items were inverted if the statement was negative, then the score for each item was summed together and divided by the total number of items, resulting in a mean score for each individual. Therefore, a higher mean score on CNS indicates higher feelings of connectedness to nature (Mayer & Frantz, 2004).

Once the scores from the scales were established, a correlation test was run to find a Pearson correlation coefficient to assess the numeric biophilic design scores for each workspace with the scores on each scale. Additional analysis then determined the average score for each scale within each grouped level of biophilic design score (low, medium, high).

Hypotheses 3, 4, and 5 were tested through the analysis of the ratings of perceived effectiveness at enabling connection to nature (Hypothesis 3), relaxation/calmness (Hypothesis 4), and cheerfulness

(Hypothesis 5) for each of the renderings of imagined workspaces featuring different biophilic elements. To achieve this, a linear mixed model was created, and a Type 3 sum of squares test was reported with Satterthwaite's method to determine if the perceived effectiveness of enabling connection to nature, relaxation/calmness, and/or cheerfulness were each significantly affected by the presence or absence of the seven different biophilic element. These elements were then grouped according to their type of experience: no experience, direct experience, or indirect experience and associated with the mean ratings for each psychological variable. Post-hoc comparisons were then performed using a Tukey adjustment to determine if there were significant differences between the three groups. Additional analysis with post-hoc comparisons examined the mean rating of perceived effectiveness at enabling connection to nature, relaxation/calmness, and cheerfulness for the individual biophilic elements. Finally, further linear mixed models and Type 3 sum of square tests were performed to examine age, gender, and position at the firm for possible interactions with the ratings. Please see Table 4-2 for a summary of each of the hypotheses and the associated statistical methods used for testing.

4.3 Phase 2 – Interviews

Based on the precedent established by multiple studies in the reviewed literature to qualitatively evaluate an individual's experience with biophilic design in the workplace (Gray, 2018; Gray & Birrell, 2014; Ozdemir, 2010; Thomsen et al., 2011), this study utilized follow-up interviews after the survey in order to gain a more holistic understanding of the research questions.

4.3.1 Participants

Fifty-five people indicated at the end of the survey that they would be willing to participate in a follow up interview for a chance to win one of three \$100 gift cards. From this population, a subset of individuals was identified based on demographic information. First, participants who failed to provide adequate contact information were eliminated. Then, the list of participants was organized according to

their number of years at the firm. Next, individuals from duplicate offices were removed from the list within each category. Subsequently, individuals of differing genders and regions were selected

Table 4-2			
<i>Summary of hypotheses, variables, and statistical tests used for analysis</i>			
Hypotheses	Variables		Types of Statistical Tests
<i>Hypothesis 1:</i> A greater presence of biophilic design in the work-from-home environment will be associated with higher levels of wellbeing.	Biophilic design in home workspaces (as measured by composite scores from ratings of photographs of workspaces)	Wellbeing as measured by WEMWBS	Correlation test to determine Pearson correlation coefficient
<i>Hypothesis 2:</i> A greater presence of biophilic design in the work-from-home environment will be associated with higher levels of connectedness to nature.	Biophilic design in home workspaces (as measured by composite scores from ratings of photographs of workspaces)	Connectedness to nature as measured by CNS	Correlation test to determine Pearson correlation coefficient
<i>Hypothesis 3:</i> Biophilic elements that enable direct experiences of nature will be rated as more effective at connecting people to nature than biophilic features that enable indirect experiences of nature.	Biophilic design elements (as represented by renderings of multiple direct and indirect experience of nature)	Ratings on perceived effectiveness at enabling connection to nature	Type 3 sum of squares test; post-hoc comparisons
<i>Hypothesis 4:</i> Biophilic elements that enable direct experiences of nature will be rated as more effective at enhancing relaxation than biophilic features that enable indirect experiences of nature.	Biophilic design elements (as represented by renderings of multiple direct and indirect experience of nature)	Ratings on perceived effectiveness at enabling relaxation / calm	Type 3 sum of squares test; post-hoc comparisons
<i>Hypothesis 5:</i> Biophilic elements that enable direct experiences of nature will be rated as more effective at enhancing cheerfulness than biophilic features that enable indirect experiences of nature.	Biophilic design elements (as represented by renderings of multiple direct and indirect experience of nature)	Ratings on perceived effectiveness at enabling cheerfulness	Type 3 sum of squares test; post-hoc comparisons

from each grouping of years of experience. The only individual who selected a gender other than male or female was added. The only individual who selected an ethnicity other than white was also added. Finally, two additional individuals were selected from the 1-5 year range since a heavy portion of the respondents were in that group. These were selected from offices at the firm that did not otherwise appear on the list. One selection was changed in the 1-5 year range in order to include someone of a younger age (less than 24). In this case, the next female down the list was selected. One additional selection was changed in the “More than 20 year” range because the individual initially selected was no longer with the firm by the time of the interview. In this case, the next female down the list was selected. This process enabled the collection of a group of 17 individuals who represented a cross section of the firm in terms of age, years of experience, position, office, and gender.

These individuals were then contacted via email and invited to participate in an interview. Eleven individuals responded and participated in an interview. Prior to the recorded interviews, the interview questions were also beta-tested on two individuals within the firm in order to solicit feedback on the questions. These participants were selected based on their familiarity with the researcher and their ability to conduct research. Their results were not included in the final data. They were not included in the drawing. The feedback from the pilot interviews was minimal and only resulted in portions of two of the interview questions being shared on screen for visual reference. No other changes were made to the interview process or questions.

4.3.2 Instrument & Procedure

Interviews were semi-structured and followed a pre-established set of questions. The researcher deviated from the script and pursued other lines of inquiry within this structure as was appropriate to each interview. The interview guide was developed to align with the survey questionnaire and enable respondents to expand upon their own considerations regarding their work-from-home space and its

related impact on wellbeing and feelings of connection to nature. This enabled a deeper exploration of the hypotheses and an understanding of each participant's reasoning behind their survey responses.

First, to establish a baseline understanding of the workspace and to align with the digital renderings assessment section of the survey, interviewees were asked to describe their work-from-home workspace, why they selected the space, what they liked/disliked about the space, and what they wished they could add to the space. This enabled interviewees to expound upon what factors were important to them in their work from home environment. Next, to relate to the connectedness to nature and wellbeing scales included in the survey, interviewees were given a definition of connection to nature and a definition of wellbeing and asked if their work-from-home workspace encouraged either of those feelings. Based on feedback from the pilot interviews, these definitions were shared on screen for participants to read and reference. This enabled individuals to describe why their work-from-home workspace either supported or negated wellbeing and connection to nature and which aspects of the environment were associated with each feeling. Following this, interviewees were asked about their overall concepts related to nature, wellbeing, and exposure to outdoor nature. This served to establish an understanding of what exposure to nature individuals may be getting outside of their work-from-home workspace. Subsequently, interviewees were asked if their workspace met their needs. This enabled interviewees to describe any frustrations that may be inhibiting their feelings of wellbeing. Finally, individuals were given an opportunity to share additional comments. Please refer to section A.5 of Appendix A for the full interview guide.

Because of continuing social distancing restrictions related to the COVID-19 pandemic and due to travel distance between the researcher and interviewees, the interviews were conducted via an online video conferencing software. Each interview took less than thirty minutes with the shortest lasting approximately 14 minutes and the longest lasting 27 minutes. Interviews were recorded and later transcribed through the use of a digital transcription software.

4.3.3 Data Analysis

Interview transcripts were analyzed through the method of naturalistic inquiry established by Lincoln and Guba (1985). A line-by-line analysis of the transcripts was conducted to identify any passages that represented new ideas or topics within the interview. Each of these passages were then copied onto a note card along with a code identifying the interview to which it belonged. A total number of 327 cards were generated. Note cards were then sorted into general topics by the researcher and recorded. A second graduate student with training in environmental psychology then performed the same method on the cards to develop general topics. Differences in general topics were identified, discussed, and resolved into a final set of general topics. Please refer to section C.2 of Appendix C for transcripts of the full interviews.

Chapter 5: Survey Results

5.1 Demographics of Survey Respondents

The survey gathered complete responses from 88 individuals within the architecture firm. This pool was comprised of 62.5% females ($n=55$), 36.4% males ($n=32$), and 1.1% ($n=1$) whose gender was marked as “Prefer not to state”. Because the data on age was gathered with a multiple-choice question that grouped ages, the mean age of respondents cannot be accurately determined; however, the median age for the overall sample as well as for males alone fell into the range of 40-44 years. The median age for females fell into the range of 35-39 years. The sample was overwhelmingly ethnically white (87.5%, $n=77$) and educated with either a Bachelor’s degree (54.5%, $n=48$) or Master’s degree (36.4%, $n=32$). For the full data regarding demographics, please refer to Tables 5-1 through 5-4. For the additional data collected regarding the personal demographics of the survey sample, including number of children and number of pets, please refer to Tables B-1 through B-3 in Appendix B.

Table 5-1*Age Ranges of Survey Participants*

Age	N	%
18-24	4	4.55
25-29	12	13.64
30-34	15	17.05
35-39	11	12.50
40-44	14	15.91
45-49	7	7.95
50-54	10	11.36
55-59	10	11.36
60-64	3	3.41
65+	2	2.27

Table 5-2*Genders of Survey Participants*

Gender	N	%
Female	55	62.50
Male	32	36.36
Prefer not to state	1	1.14

Table 5-3*Ethnicities of Survey Participants*

Ethnicity	N	%
American Indian/White	1	1.14
Asian	7	7.95
Asian / Latina	1	1.14
Hispanic, Latino, or of Spanish origin	2	2.27
White / Caucasian	77	87.50

Table 5-4*Education Levels of Survey Participants*

Education Level	N	%
High School Diploma	1	1.14
Associate Degree	4	4.55
Bachelor's Degree	48	54.55
Master's Degree	32	36.36
Doctoral Degree	2	2.27
Other	1	1.14

The majority of the sample lives in urban (53.4%, $n = 47$) areas, followed by suburban (39.8%, $n=35$) areas. Additionally, the majority of survey participants indicated they experience outdoor

exposure to nature, meaning they spent a minimum of twenty minutes in nature, at least 5 times per week (64.8%, $n=57$). Fisher's Exact Test determined that there was no statistical difference between males and females for age ($p=0.3658$), neighborhood density ($p=0.6938$), or exposure to outdoor nature ($p=0.1453$). Similarly, there was no statistically significant difference by neighborhood density for amount of nature exposure ($p=0.8702$) or frequency of discussing nature ($p=0.7615$). For the full information regarding the sample's neighborhood density, and exposure to outdoor nature, please refer to Tables 5-5 and 5-6. For the data collected regarding the frequency of discussing nature, please see to Table B-4 in Appendix B.

Table 5-5

<i>Neighborhood Density for Survey Participants</i>		
Neighborhood Density	N	%
Rural	3	3.41
Small city or Village	3	3.41
Suburban	35	39.77
Urban area	47	53.41

Table 5-6

<i>Survey Participant's Frequency of Exposure to Outdoor Nature</i>		
Time Spent in Nature	N	%
Less than once a week	4	4.55
Once a week	1	1.14
2 times a week	9	10.23
3 times a week	9	10.23
4 times a week	8	9.09
5 times a week	6	6.82
6 times a week	8	9.09
Daily	43	48.86

Professionally, the survey respondents represented all levels of position at the firm with 3.4% at the Hourly, Intern level ($n=3$), 13.6% at the Staff Level ($n=12$), 47.7% at the Associate or Senior Associate Level ($n=42$), and 35.2% at the Senior Leadership (VP, AVP) Level ($n=31$). The pool was comprised of a wide range in the number of years each employee had been with the company. The majority of respondents indicated they had been with the company for 1-5 years (40.9%, $n=36$) or for

5-10 years (19.32%, $n=17$), while a smaller number had been with the company for 10-15 years (12.5%, $n=11$), 15-20 years (6.8%, $n=6$), more than 20 years (11.36%, $n=10$), or less than 1 year (9.1%, $n=8$).

Finally, the sample provided at least one individual from each of the firm's 10 offices across the United States, with the majority coming from the firm's Minneapolis office (39.77%, $n=35$) and Milwaukee office (20.5%, $n=18$). For the full data collected regarding the professional demographics of the survey sample, please refer to Tables 5-7 through 5-9.

Table 5-7

<i>Survey Participant's Position at Architecture Firm</i>		
Position at Firm	N	%
Senior Leadership (VP, AVP)	31	35.23
Associate or Senior Associate	42	47.73
Staff	12	13.64
Hourly, Intern	3	3.41

Table 5-8

<i>Length of Time Survey Participants Work for the Firm</i>		
Years With Company	N	%
less than 1 year	8	9.09
1-5 years	36	40.91
5-10 years	17	19.32
10-15 years	11	12.50
15-20 years	6	6.82
more than 20 years	10	11.36

Table 5-9

<i>Original Office Locations for Survey Participants</i>		
Office Location	N	%
Alexandria / Washington, D.C.	6	6.82
Boston	5	5.68
Los Angeles	4	4.55
Madison	1	1.14
Milwaukee	18	20.45
Minneapolis	35	39.77
Rochester	1	1.14
Sacramento	4	4.55
San Francisco	6	6.82
San Jose	6	6.82
Other	1	1.14
Remote	1	1.14

5.2 Biophilic Design in Participants' Workspaces

5.2.1 Image Rating of Work-From-Home Workspaces

The Intra-Correlation Coefficients (ICC) were calculated for each group of images rated by the judges (refer to section 4.2.3). Results are summarized in Table 5-10. Because the ICC for Group A is less than 0.5, this is characterized overall as having poor reliability (Koo & Li, 2016), however, the group still achieved some statistically significant agreement as indicated by the small p-value. The ICC for both Group B and C indicate moderate reliability (Koo & Li, 2016).

Table 5-10

<i>Intra-Correlation Coefficients (ICC) for the ratings of each group of images.</i>			
Image Group	ICC	p-value	95% Confidence Interval
Group A	.49	$p<0.0001$	0.24 to 0.69
Group B	.64	$p<0.0001$	0.45 to 0.79
Group C	.56	$p<0.0001$	0.366 to 0.73

Following the Intra-Correlation Coefficient analysis, a numeric score for amount of biophilic design in each image of a work-from-home workspace was calculated based on the mean of the five ratings within each group. Refer to the images in Table B-5 in Appendix B for the score associated with each workspace. The scores for the amount of biophilic design in the images was rated on a scale of 1 to 5 with 5 being high. The mean score in Group A was 2.45 ($SD=0.73$), in Group B was 2.36 ($SD=0.76$), and in Group C was 1.91 ($SD=0.61$). The overall mean score for the amount of biophilic design in all of the collected images of work-from-home workspaces was 2.24($SD=0.75$). Grouping the images by score resulted in categories with in $n=36$ for low, $n=34$ for medium, and $n=16$ for high.

5.2.2 Hypothesis 1 – Biophilic Design & Wellbeing

The first hypothesis was tested through examination of the relationship between the biophilic design score for each workspace with scores on the wellbeing scale. The Warwick Edinburgh Mental Wellbeing Scale (WEMWBS) had a Cronbach's alpha of 0.81 with a 95% confidence interval from 0.76

to 0.87, demonstrating the scale in this survey had sufficient internal consistency to continue with analysis. The average score on WEMWBS was 89.04 ($SD=20.21$) out of a possible total score of 140.

The correlation test comparing the numeric biophilic design scores for each workspace with the WEMWBS score for each participant indicated a Pearson correlation coefficient of 0.10 ($p=0.35$). This suggests there was no statistically significant relationship between the biophilic design score for each workplace and the total WEMWBS score. The average WEMWBS scores within each grouped level of biophilic design scores corroborate these findings. In the low category, the mean WEMWBS score was 89.12 ($SD=16.42$). In the medium category, the mean WEMWBS score was 86.53 ($SD= 24.57$). In the high category, the mean WEMWBS score was 93.48 ($SD=19.85$). These results are summarized in Table 5-11. Again, no discernable relationship was found between the amount of biophilic design in each workspace and the worker's mental wellbeing.

Table 5-11

<i>WEMWBS Score by Lvel of Amount of Biophilic Design</i>		
Level of Biophilic Design	Mean Score	(SD)
Low	89.12	(16.42)
Medium	86.53	(24.57)
High	93.48	(19.85)

5.2.3 Hypothesis 2 – Biophilic Design & Connection to Nature

The second hypothesis was tested through examination of the relationship between the biophilic design score for each workspace with mean scores on the connectedness to nature scale (CNS). The CNS demonstrated a Cronbach's alpha of 0.92 with a 95% confidence interval from 0.89 to 0.94, indicating very strong internal consistency for the scale within this study. The average mean score for all participants on the CNS was 6.53 ($SD=1.29$) on a scale of 0 to 10 with 10 being high.

The Pearson correlation coefficient between the score for amount of biophilic design and the scores on the CNS scale was 0.26 ($p=0.02$). This finding indicates there is a weak but significant correlation between the score for the amount of biophilic design for each workplace with feelings of

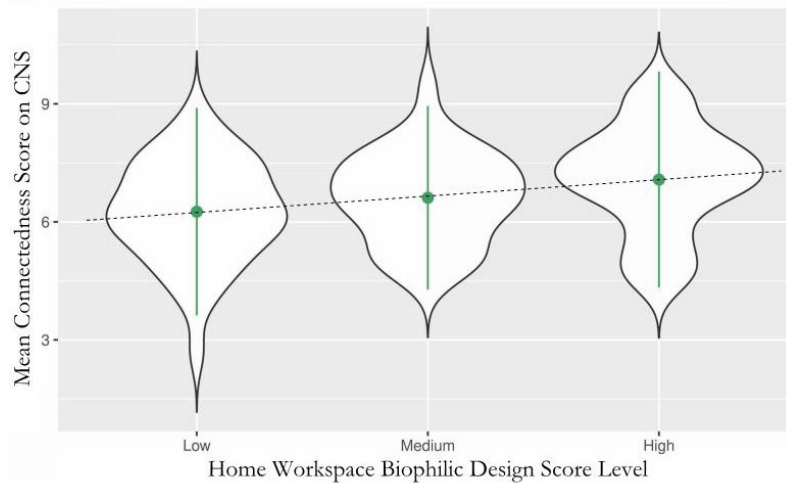
connection to nature. Within the groups for amount of biophilic design, the mean CNS score was 6.26 ($SD=1.32$) for the low category, 6.61 ($SD= 1.17$) for the medium category, 7.07 ($SD=1.37$) for the high category. These results are summarized in Table 5-12 and in Figure 5-1. Again, this analysis confirms the slight positive correlation between the amount of biophilic design and feelings of connection to nature. As the score for the amount of biophilic design increases, so does the CNS score.

Table 5-12

<i>CNS Score by Level of Amount of Biophilic Design</i>		
Level of Biophilic Design	Mean Score	(SD)
Low	6.26	(1.31)
Medium	6.61	(1.17)
High	7.07	(1.37)

Figure 5-1

Relationship of Level of Amount of Biophilic Design with Connectedness to Nature (CNS) Scores



Further analysis revealed that the relationship between CNS and the amount of biophilic design had a significant interaction with gender. Additional correlation tests with the numerical scores for the amount of biophilic design revealed the Pearson correlation coefficient for females was 0.34 ($p=0.01$), indicating a moderate and significant correlation, while the Pearson correlation coefficient for males was 0.04 ($p=0.82$), indicating no significant correlation was found between CNS and the amount of biophilic design for males. Similar to the overall analysis, an additional analysis was performed to

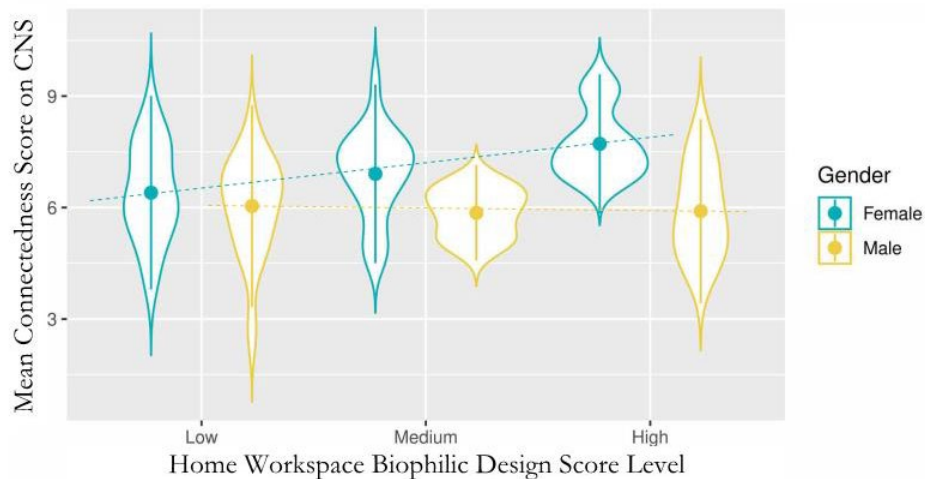
determine the average CNS scores for each gender within each grouped level of biophilic design score (low, medium, high). In the low category, the mean CNS score for females was 6.40 ($SD=1.30$). In the medium category, the mean CNS score was 6.91 ($SD= 1.20$). In the high category, the mean CNS score was 7.72 ($SD=0.94$). The results for those identifying as male and female genders are summarized in Table 5-13 and in Figure 5-2. This analysis illustrates there is a moderate positive correlation between amount of biophilic design and feelings of connection to nature only for females in this study. The amount of biophilic design was found not to relate to feelings of connection to nature for males.

Table 5-13

<i>CNS Score by Level of Amount of Biophilic Design and Gender</i>			
Level of Biophilic Design	Gender	Mean Score	(SD)
Low	Female	6.40	(1.30)
Medium	Female	6.91	(1.20)
High	Female	7.72	(0.94)
Low	Male	6.04	(1.36)
Medium	Male	5.85	(0.64)
High	Male	5.90	(0.96)

Figure 5-2

Correlation Between Level of Amount of Biophilic Design with Connectedness to Nature by Gender



5.3 Biophilic Design Elements in Workspace Renderings

In the analysis for Hypotheses 3, 4, and 5, the renderings of imagined workspaces that depicted different biophilic elements were grouped by the type of experience of nature they provided, according

to the framework by Kellert and Calabrese (2015). The control rendering which featured nothing (no biophilic elements) was left in its own group titled “No Experience.” The renderings depicting a window to the city, a window to the yard, indoor plants, and a green wall were collected into a group titled “Direct Experience.” Finally, the renderings depicting the wood textured wall, the painting of a natural scene, and the vine wall paper were collected into a group titled “Indirect Experience.”

5.3.1 Hypothesis 3 – Biophilic Design Elements & Connection to Nature

Results of the analysis regarding Hypothesis 3 indicate the perceived effectiveness of enabling connection to nature was significantly affected by the presence or absence of the seven different biophilic elements ($F(7,609) = 122.45, p < .0001$). Within the three experience groupings, the mean rating for perceived effectiveness at enabling connection to nature varied significantly between each group with No Experience having a mean of 2.50 ($SD\ 2.15$), Direct Experience having a mean of 6.09 ($SD\ 2.49$), and Indirect Experience having a mean of 3.63 ($SD\ 2.34$). Assuming equal variance across all groups, the post-hoc comparison confirmed there are significant differences between all three groups. See Table 5-14 and Table 5-15 for a summary of these results.

Table 5-14

<i>Ratings of Perceived Effectiveness of Biophilic Elements by Type of Experience in Enabling Connection to Nature</i>		
Experience Type	Mean Score	(SD)
No Experience	2.50	(2.15)
Direct Experience	6.09	(2.49)
Indirect Experience	3.63	(2.34)

Table 5-15

<i>Post-hoc Pairwise Comparisons between Ratings of Perceived Effectiveness of Biophilic Elements in Enabling Connection to Nature by Type of Experience</i>					
Contrast	Estimated Mean Difference	(SE)	df	T-Ratio	P-Value
No Experience – Direct Experience	-3.59	0.209	614	-17.156	<.0001
No Experience – Indirect Experience	-1.13	0.216	614	-5.241	<.0001
Direct Experience – Indirect Experience	2.46	0.143	614	17.189	<.0001

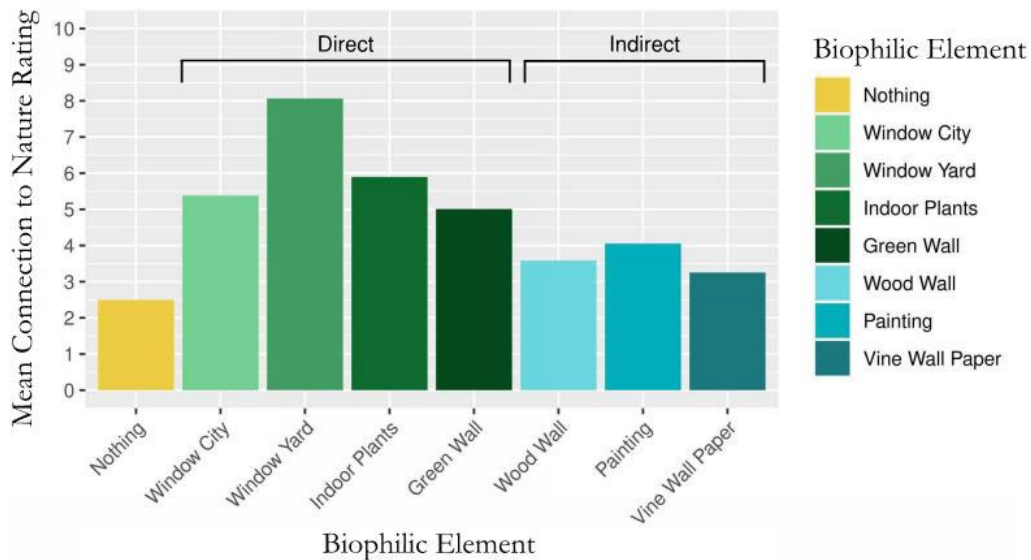
Additional analysis examining the mean rating for perceived effectiveness at enabling connection to nature for individual biophilic elements found that the window to the yard was considered most effective at enabling connection to nature ($M=8.07$, $SD=1.53$) followed by indoor plants ($M=5.90$, $SD=2.23$) and then the window to the city ($M=5.38$, $SD=2.42$). See Table 5-16 and Figure 5-3 for a summary of these results.

Table 5-16

<i>Ratings of Perceived Effectiveness of Individual Biophilic Elements in Enabling Connection to Nature</i>			
Biophilic Element		Mean Score	(SD)
Direct Experience			
Window yard		8.07	(1.53)
Indoor plants		5.90	(2.23)
Window city		5.38	(2.42)
Green wall		5.01	(2.47)
Indirect Experience			
Painting		4.05	(2.34)
Wood wall		3.59	(2.44)
Vine wall paper		3.25	(2.20)
No Experience			
Nothing		2.50	(2.15)

Figure 5-3

Perception of Effectiveness at Enabling Connection to Nature by Biophilic Element



Results of the analysis for possible interactions confirmed there is a slightly significant interaction between both position ($p=0.0401$) and age ($p=0.0268$) with perception of several biophilic design elements. See section B.3 in Appendix B for a figure illustrating these interactions. There was no significant interaction with gender ($p=0.1341$).

5.3.2 Hypothesis 4 – Biophilic Design Elements & Relaxation

Results of the analysis for Hypothesis 4 indicate the perceived effectiveness of enabling feelings of relaxation and calmness was significantly affected by the presence or absence of the seven different biophilic elements ($F(2,614) = 51.749, p < .0001$). Within the three experience groupings, the mean rating for perceived effectiveness at enabling feelings of relaxation and calmness varied significantly between each group with No Experience having a mean of 6.72 ($SD=2.53$), Direct Experience having a mean of 6.20 ($SD=2.36$), and Indirect Experience having a mean of 5.01 ($SD=2.57$). Note that the rating for relaxation and calmness was highest in the No Experience group, followed closely by Direct Experience. This differs from the findings for enabling connection to nature. Assuming equal variance across all groups, the post-hoc comparison confirmed there are significant differences between all three groups. See Table 5-17 and 5-18 for a summary of these results.

Additional analysis examining the mean ratings for perceived effectiveness at enabling feelings of relaxation and calmness for individual biophilic elements found that the window to the yard was again considered most effective ($M=7.47, SD=1.81$) followed by nothing ($M=6.72, SD=2.53$) and then the indoor plants ($M=6.63, SD=2.08$). See Table 5-19 and Figure 5-4 for a summary of these results.

Table 5-17

Ratings of Perceived Effectiveness of Biophilic Elements by Type of Experience in Enabling Relaxation & Calmness

Experience Type	Mean Score	(SD)
No Experience	6.72	(2.53)
Direct Experience	6.20	(2.36)
Indirect Experience	5.01	(2.57)

Table 5-18

Post-hoc Pairwise Comparisons between Ratings of Perceived Effectiveness of Biophilic Elements in Enabling Relaxation & Calmness by Type of Experience

Contrast	Estimated Mean Difference	(SE)	df	T-Ratio	P-Value
No Experience - Direct Experience	0.516	0.201	614	2.572	0.0279
No Experience – Indirect Experience	1.703	0.207	614	8.217	<.0001
Direct Experience – Indirect Experience	1.187	0.137	614	8.659	<.0001

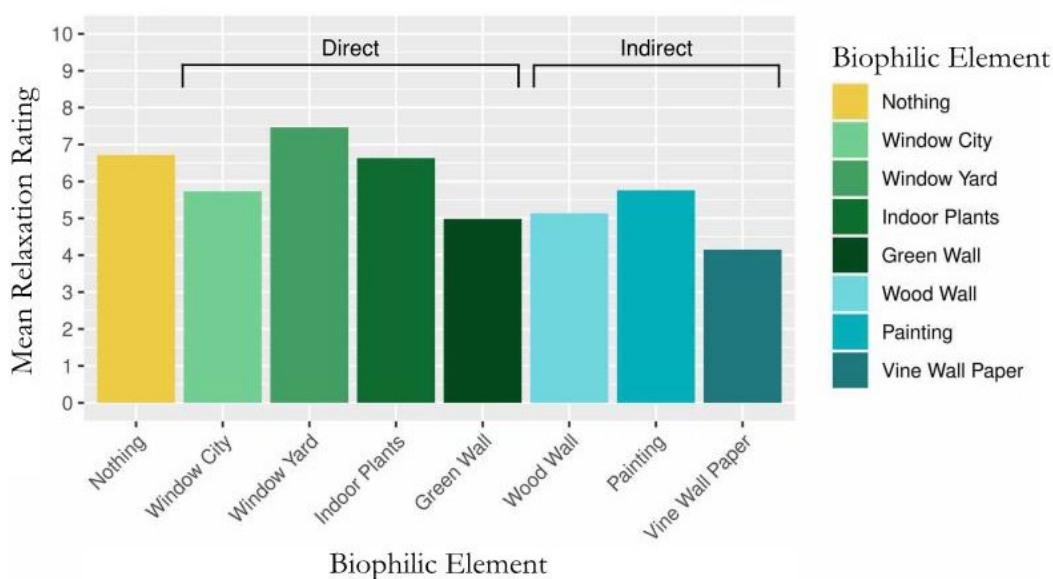
Table 5-19

Ratings of Perceived Effectiveness of Individual Biophilic Elements in Enabling Relaxation & Calmness

Biophilic Element	Mean Score	(SD)
No Experience		
Nothing	6.72	(2.57)
Direct Experience		
Window yard	7.47	(1.79)
Indoor plants	6.63	(2.15)
Window city	5.73	(2.25)
Green wall	4.98	(2.24)
Indirect Experience		
Painting	5.76	(2.35)
Wood wall	5.14	(2.37)
Vine wall paper	4.15	(2.61)

Figure 5-4

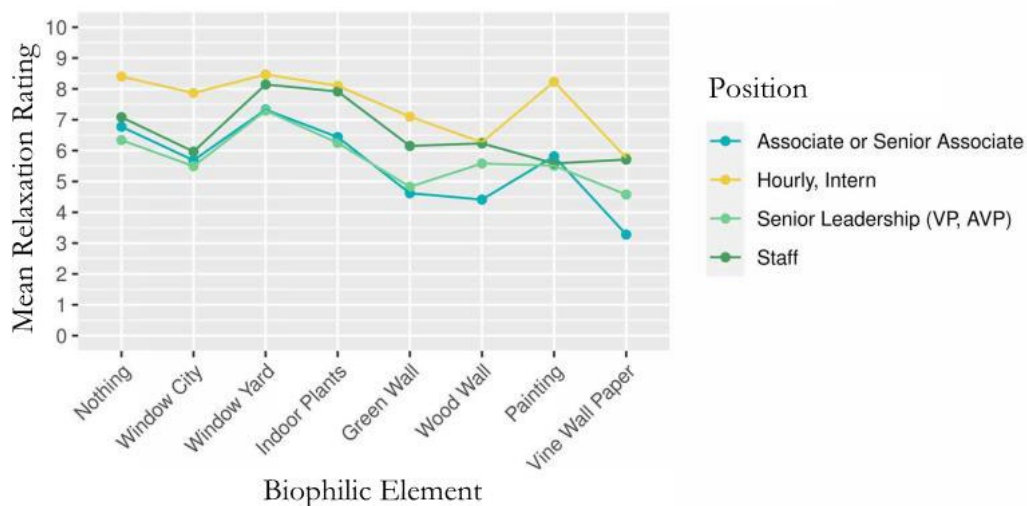
Perception of Effectiveness at Enabling Relaxation & Calmness by Biophilic Element



Results of the analysis for possible interactions confirmed there is a significant interaction with position at the firm ($p=0.0017$) and perception of several biophilic design elements. In particular, while all positions rated the rendering with no biophilic elements (nothing) fairly highly as enabling relaxation and calmness, the “Hourly, Intern” position rated it especially highly ($M=8.40$, $SD=1.49$). See Figure 5-5 for a depiction of the interaction of perception of a biophilic design element’s effectiveness in enabling feelings of relaxation with position. No significant interactions for age ($p=0.0833$) or gender ($p=0.4656$) were observed.

Figure 5-5

Interaction of Perception of Biophilic Design Element supporting Relaxation by Position



5.3.3 Hypothesis 5 – Biophilic Design Elements & Cheerfulness

Results of the analysis for Hypothesis 5 indicate the perceived effectiveness of enabling feelings of cheerfulness was significantly affected by the presence or absence of the seven different biophilic elements ($F(7,609) = 40.882$, $p < .0001$). Within the three experience groupings, the mean rating for perceived effectiveness at enabling feelings of cheerfulness varied significantly between each group with No Experience having a mean of 4.05 ($SD=2.57$), Direct Experience having a mean of 5.89 ($SD=2.27$), and Indirect Experience having a mean of 4.64 ($SD=2.44$). These findings follow the same pattern as for enabling connection to nature such that Direct Experience had the highest average rating, followed

by Indirect Experience, and finally by No Experience. Assuming equal variance across all groups, the post-hoc comparison confirmed there are significant differences between all three groups. See Table 5-20 and 5-21 for a summary of these results.

Table 5-20

<i>Ratings of Perceived Effectiveness of Biophilic Elements by Type of Experience in Enabling Cheerfulness</i>		
Experience Level	Mean Score	(SD)
No Experience	4.05	(2.57)
Direct Experience	5.89	(2.27)
Indirect Experience	4.64	(2.44)

Table 5-21

<i>Post-hoc Pairwise Comparisons between Ratings of Perceived Effectiveness of Biophilic Elements in Enabling Cheerfulness by Type of Experience</i>					
Contrast	Estimated Mean Difference	(SE)	df	T-Ratio	P-Value
No Experience - Direct Experience	-1.847	0.193	614	-9.575	<.0001
No Experience – Indirect Experience	-0.591	0.199	614	-2.969	0.0087
Direct Experience – Indirect Experience	1.255	0.132	614	9.528	<.0001

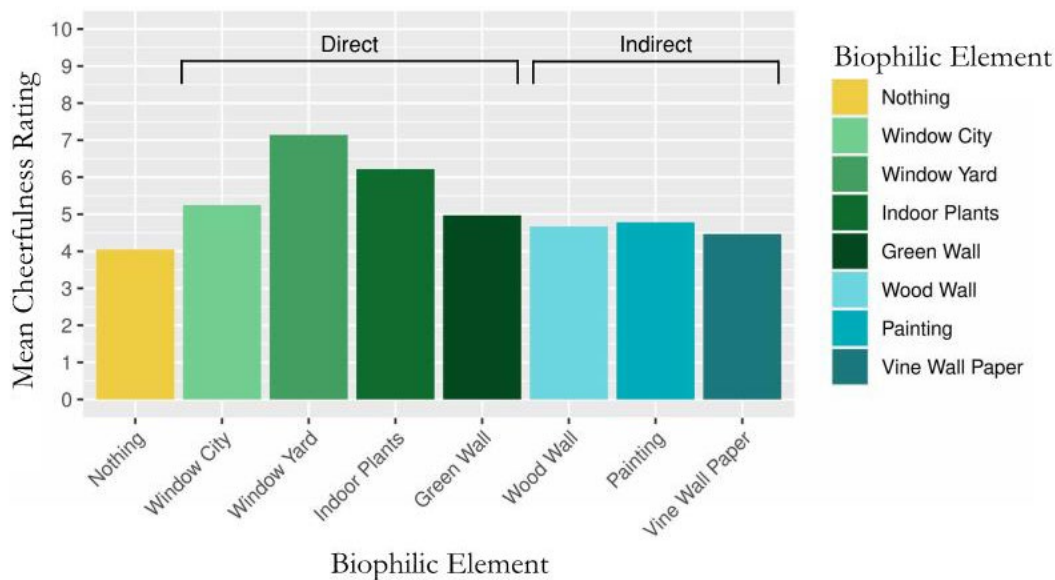
Additional analysis examining the mean rating for perceived effectiveness at enabling feelings of cheerfulness for individual biophilic elements found that the window to the yard was again considered most effective ($M=7.14$, $SD=1.79$) followed by indoor plants ($M=6.22$, $SD=2.15$) and then the window to the city ($M=5.25$, $SD=2.24$). See Table 5-22 and Figure 5-6 for a summary of these results.

Table 5-22

<i>Ratings of Perceived Effectiveness of Individual Biophilic Elements in Enabling Cheerfulness</i>		
Biophilic Element	Mean Score	(SD)
Direct Experience		
Window Yard	7.14	(1.79)
Indoor Plants	6.22	(2.15)
Window City	5.25	(2.24)
Green Wall	4.97	(2.25)
Indirect Experience		
Painting	4.78	(2.35)
Wood Wall	4.67	(2.37)
Vine Wall Paper	4.46	(2.61)
No Experience		
Nothing	4.05	(2.57)

Figure 5-6

Perception of Effectiveness at Enabling Cheerfulness by Biophilic Element



Results of the analysis for possible interactions confirmed there was a slightly significant interaction with position at the firm ($p=0.031$) and perception of several biophilic elements, however due to small sample sizes within each group, confident conclusions could not be drawn. The analysis also indicated there was a strongly significant interaction with gender ($p=0.0008$) and perception of biophilic elements. In general, females perceived the biophilic elements as making them feel more cheerful than males, particularly for the Green Wall (*Females: $M= 5.37$, $SD = 2.13$, *Males: $M=4.32$, $SD=2.32$*) and for the Vine Wall Paper (*Females: $M= 5.22$, $SD = 2.55$, *Males: $M=3.23$, $SD=2.25$*). See section B.3 in Appendix B for a figure describing the interaction of rating of biophilic design element's effectiveness in enabling feelings of cheerfulness with gender and position. No significant interaction for age ($p=0.6601$) was observed.**

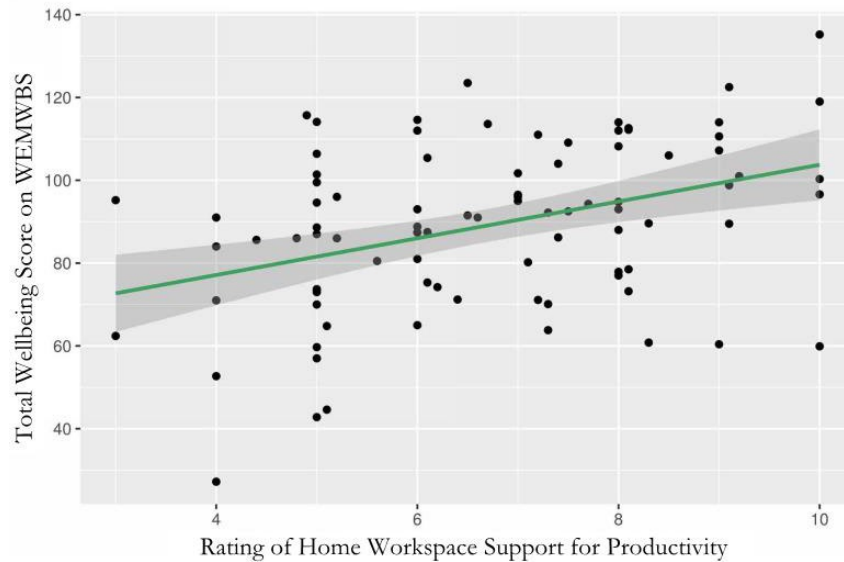
5.4 Additional Findings

In addition to the findings related to the hypotheses, one additional significant correlation presented itself through the data analysis process. Because this research received assistance from an architecture firm in order to recruit the population for the study, an additional set of questions was

included in the survey at the request of the firm regarding the quality of the work-from-home environment that was not otherwise included in the analysis. One of the questions from this section correlated significantly with the WEMWBS. Survey respondents were asked to “rate how strongly the design of your work space hinders or enhances your work productivity” on a scale from 0 to 10 with 0=strongly hinders and 10=strongly enhances. A linear model was created between these two variables. From this, a correlation test was run to compare the numeric responses from this question with WEMWBS and a Pearson Correlation Coefficient of 0.38 ($p<.0001$) was found. This suggests that wellbeing was mildly positively correlated with work-from-home workspaces that were perceived to enhance productivity. See Figure 5-7 for a description of this relationship. Unlike the results from Hypothesis 2, this relationship does not vary significantly due to gender ($p=0.7811$).

Figure 5-7

Correlation of WEMWBS Score with Workspace Support for Productivity



Chapter 6: Interview Results

6.1 Demographics of Interview Respondents

Of the eleven individuals that chose to participate in a follow up interview, 72.7% were female ($n=8$), 18.2% were male ($n=2$), and 9.09% indicated their gender as “Prefer not to state” ($n=1$). The

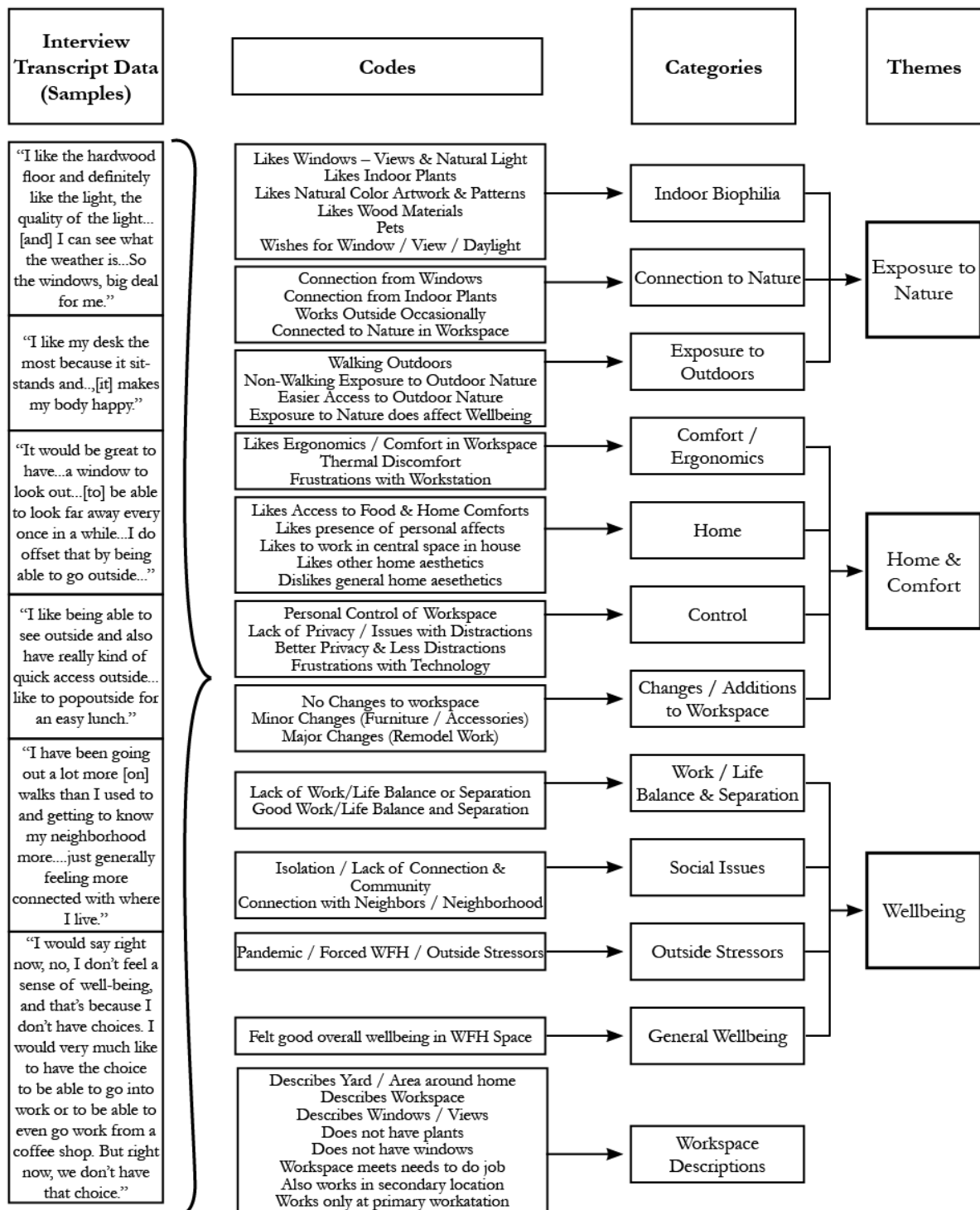
individuals were all ethnically white (100%, $n=11$) and were educated with either Bachelor's degrees (63.6%, $n=7$), or Master's degrees (36.4%, $n=4$). Similar to the survey data, the majority of respondents lived in suburban (54.5%, $n=6$) or urban areas (36.4%, $n=4$) and experienced outdoor exposure to nature at least five times per week (54.5%, $n=6$). Professionally, the sample provided representation for all positions at the firm with 0.09% at the Hourly, Intern level ($n=1$), 18.2% at the Staff level ($n=2$), 54.5% at the Associate or Senior Associate level ($n=6$), and 18.2% at the Senior Leadership (VP, AVP) level ($n=2$). Similar to the survey pool, the majority of the respondents had been with the firm for 1-5 years (54.5%, $n=6$) or 5-10 years (18.2%, $n=2$). Respondents represented seven of the firm's ten offices. For the full data regarding age, gender, ethnicity, education, neighborhood density, exposure to outdoor nature, professional position within the firm, years with the firm, and office location, please refer to Tables C-1 through C-9 in Appendix C.

6.2 Results of Naturalistic Inquiry

The naturalistic inquiry card sort resulted in forty-four codes describing the various topics discussed in the interviews. These codes were grouped into twelve categories based on similar concepts. These categories were then further distilled into three overarching themes: exposure to nature, home & comfort, and overall wellbeing. These themes represent the aspects of working from home that were most important to the participants being interviewed. It is worth noting that some of the codes fell into a category of simply describing the features of the work-from-home workspace. This was useful in the interview for encouraging respondents to consider their workspace but was not included in the overarching themes as it did not provide insights into the psychological impacts of work-from-home workspaces. Refer to Figure 6-1 for a graph depicting the full list of codes and how these filtered into categories and themes.

Figure 6-1

Results of the Qualitative Analysis Card Sort from the Method of Naturalistic Inquiry



6.3 Summary of Themes

6.3.1 *Exposure to Nature*

Contact with nature, both indoors and outside, came up frequently during the interviews. In fact, all interviewees stated that they felt exposure to nature was important to their overall wellbeing. The discussions surrounding nature broke into three topics: indoor biophilia, connection to nature, and exposure to outdoor environments. The topic of indoor biophilia encompasses elements of nature, or elements inspired by nature, that individuals experienced or wished to experience from their indoor workspace. Almost all interviewees brought up windows and the related availability of daylight and/or the ability to view nature out of the window as a feature they either liked about their existing workspace or of which they desired more. For example, one interviewee described why she liked to see and hear what was happening outside when her window was open by stating:

“You feel more connected to what's going on outside and not like you're in a little bubble, especially working alone. I think I realized it less in an office with other people moving around me. And just like natural light is really nice to have during the day, especially when you're staring at a screen.” (Fem Interviewee 5)

Wishing she had more access to daylight, when asked if she could add anything to her workspace, another interviewee stated, “I would add if I could [...] I would add more light. [It currently] doesn't get very far in.” (Fem Interviewee 8). Plants also came up as an indoor natural element that was felt by interviewees to be important in their enjoyment of their space. For example, when describing how she designed her home and work area, one interviewee stated,

“We have, like, a lot of plants that we've been trying to pull in and, like, buy furniture, to kind of support them. And that's kind of just an overall aesthetic thing. But then it also does, you know, play into the biophilic design concept, not only as in my workspace, but, you know, just like as an overall house comfort.” (Fem Interviewee 4)

However, many interviewees also indicated they did not have plants in their space, often citing inability to keep them alive as the main reason. Other elements of indoor nature that interviewees indicated they enjoyed within their space include wood materials and nature-inspired colors, artwork, and patterns, though these items were less often mentioned than windows and plants. Wood material from desks, flooring, and wall paneling were suggested by a few interviewees to provide feelings of connection to nature and wellbeing. However, one interviewee felt the wood desk material was irrelevant. Similarly, a couple of interviewees mentioned colorful workspaces, nature inspired artwork, and natural patterns as positive elements in their workspace, though this was not common. Finally, pets were mentioned by several individuals as an important part of their work-from-home environment that they felt positively contributed to wellbeing.

Ten out of the eleven interviewees indicated that they felt connected to nature while in their workspace. Responses indicated various levels of feeling of connection to nature, however, with one individual mildly assenting and stating, “I feel connected to nature because, you know, my view [...] I feel that I can kind of always connect to that when I need visual distraction.” (Fem Interviewee 2). Another individual indicated strong attachment to nature and described it thus:

“I physically know the layout of the trees and the types of trees and plants, and if they need water, they don't need water. I can visually see changes in them. [I] also [...] feed the animals, the birds and squirrels. And I actually know individuals now because I've been observing them so long. So that really makes you feel a connection, especially with the squirrels. They have names now.” (PNS Interviewee 1).

The one individual who did not feel connected to nature worked from his basement and described his workspace as “kind of a bomb shelter.” (Male Interviewee 2). The interviewees who did feel connected to nature frequently cited views to the outdoors and/or daylight as a significant reason for feeling connected to nature within their workspace. Plants were also suggested by a couple of individuals to

provide some connection to nature but were not mentioned nearly as strongly or as frequently as views to outdoor nature.

Finally, exposure to the outdoors was a significant topic that came up when interviewees were discussing their exposure to nature. A few interviewees took advantage of the outdoor space around their home to work outside. One interviewee in particular made an effort to do it regularly when the weather was amenable and described an impact of the experience on all of his senses:

“It's that you smell the air, you feel it. I hear it and I hear the birds [...] We also have a water fountain out there that is always going. And so, having that water element. So just hearing the breeze and all that, feeling it.” (Male Interviewee 1)

On the other hand, another individual who was unable to work in the outdoors lamented, “If there was a way that I could work outside, that was clean and without the glare, I would love to like, set up a workspace outside, but that doesn't seem feasible.” (Fem Interviewee 6). In addition to working outside, multiple interviewees indicated a significant appreciation for increased ease of access to the outdoors that was previously unavailable to them when working from an office. Opportunities to “pop outside” for a break or for lunch, the ability to play fetch with the dog, or even just proximity to a door that leads directly to the outdoors were cited as important elements that contributed to enjoyment of the interviewee's workspace.

A significant number of interviewees also noted an increase in walking outdoors when working from home. For example, one interviewee noted:

“I have been going out a lot more walks than I used to and getting to know my neighborhood more. When I was like in the suburbs, [...] like where my parents live [it] is very wooded. Now [...] It's a more urban environment, but I've definitely, like, walked around the neighborhood way more than I used to.” (Fem Interviewee 1)

However, a couple individuals mentioned they also walked outdoors when working at the office.

Overall, many interviewees cited walking as their regular source of exposure to the outdoors with one individual stating, “I am able to walk to the water from where I live. So that's like the most common exposure [...] Lake Michigan and walking there is, like, my most routine exposure, exposure to nature.” (Fem Interviewee 5). Others described being able to walk their children to school or walk their dogs more frequently. Non-walking exposure to nature such as hiking on the weekends and kayaking was also discussed by interviewees, though this was not mentioned to be significantly different when working in the office compared to working from home.

6.3.2 Home & Comfort

Other than exposure to nature, interviewees often discussed features of their home and physical comfort as important aspects in consideration of likes and dislikes of their workspace. Ergonomics and physical comfort were issues of considerable focus for many of the interviewees, especially regarding workstations and chairs. Several interviewees spoke positively about their comfortable desk chair, the ability to work in different positions in their work area, the availability of multiple monitors, and, if they had one, the benefits of a sit-stand desk. When asked if she felt a sense of wellbeing in her workspace, one interviewee responded, “Yes. I feel a state of well-being when in my workstation and it is mostly because I'm so comfortable in that space and content to focus.” (Fem Interviewee 2). These positive comments were predominately made by individuals who were able to make adjustments to their work area by adding furniture elements or technology as needed. On the other hand, a significant number of interviewees stated that they wished they had more desk surface area or layout space. One interviewee described her work area by stating “It would be nice if there was more space for laying out things. So, we have.... It's a very long, skinny desk and that's just what fits in our space[...]but it's really not...not as functional as it could be.” (Fem Interviewee 7). Others indicated they wished for a larger room for their workspace and/or better storage. When setting up their work areas, approximately half of the

interviewees indicated they made some minor changes to their work-from-home workspace in order to accommodate their needs, mostly by adding desks, other furniture, monitors, or laptop stands. Others simply used an existing space.

The benefits of being in their personal homes was also a topic of interest to the interviewees. Easy access to food, cooking, blankets, and other home amenities were noted as benefits to their work-from-home workspace by a couple of individuals. One interviewee described it this way:

“I think the ability to, like, prepare your own food and being close to the kitchen has helped me a lot. Like not having to spend time in the morning, like planning my lunch for the day and being able to cook things, for myself, like in the middle of the day, I think it's really....something that I enjoy.” (Fem Interviewee 1)

Being surrounded by personal affects and desired home aesthetic was also noted as a benefit. Multiple individuals mentioned they enjoyed being in the central or “open” space of their home where they felt connected to the entire space. When describing what aspects of her workspace she liked the most, one interviewee stated, “I think I just like the openness of it. And like the central location of it. The other space options were kind of like tucked in the back of the house. And so I like kind of be up here.” (Fem Interviewee 4). However, some individuals also indicated frustrations with their work-from-home workspace such as glare from windows, an “unfinished” or “undersigned” space, and a lack of professional looking surroundings for video calls.

Finally, in relation to the home, the concept of control proved integral to the interviewee’s evaluation of their workspace. For example, several interviewees cited the ability to control temperature, music, noise, privacy, and the visibility of their presence online as important to their wellbeing and enjoyment of their work-from-home environment. When asked what features of her workspace she associated with wellbeing, one interviewee responded, “I think the kind of, like, flexibility to have it be whatever I want. It can be quiet. I can turn on some music[...] You know, that

flexibility for whatever mood I'm in and whatever kind of focus I need. I think is nice.” (Female Interviewee 6). Furthermore, one individual indicated that the ability to control distractions also tied into their ability to be productive at work. At the same time, frustrations arose for interviewees from lack of control over issues such as technology malfunctioning, temperature (from lack of air conditioning or the expense of heat), and privacy. In particular, individuals without a private room for their workspace wished to be able to separate themselves from the rest of the house at times to prevent distraction. One interviewee lamented, “It would be great if I had this kind of space in a room that I could close the door and work. It would be better for me would be better for everybody else. But we just we don't have that.” (Male Interviewee 1).

6.3.3 Wellbeing

In addition to discussing exposure to nature and features of home and physical comfort that were important to them, the interviewees also discussed the impacts of working from home and their work-from-home space on various aspects of wellbeing. Wellbeing was covered briefly by most interviewees in relation to nature exposure and home features (e.g., being comfortable in their workspace or being able to see out of the window gave them a sense of wellbeing), but topics around wellbeing also came up separately from the features of their workspace they liked and disliked. For example, when provided with a definition of wellbeing and asked directly if they felt a sense of wellbeing in their work-from-home workspace, almost all interviewees stated that they felt a good sense of wellbeing when working from their work-from-home workspace, though a couple of individuals commented that they were having trouble with the “contributing to their community” portion of the definition due to the remote nature of working from home and the requirement to maintain distance from others due to the pandemic.

Issues such as lack of connection to others, feeling isolated, or missing a sense of community was mentioned by five of the eleven interviewees as a downside to the forced work-from-home

situation. One individual who did not feel a sense of wellbeing while working from home described the reason as:

“Because we HAVE to work from home. [...] We're isolated. It's not, it's not a choice or a convenience. It's mandated. So that.... It... That makes it.... I can be productive. Don't get me wrong, I can work productively. That's not an issue. But it is more stressful. I do try to mitigate that to some degree by going on walks, usually at night. But [...] it's not as good as being in a shared work environment and office where you can collaborate with people and bump into somebody and say hi and, you know, that kind of thing.” (Male Interviewee 1)

On the other hand, a couple of interviewees mentioned that being forced to work from home has connected them more with their neighbors and neighborhood because they were confined to that area. One interviewee described how she enjoyed seeing her neighbors out of her workspace window, “I enjoy seeing the animals that go by and feeling connected to the neighbors because we all know each other now and wave and say hello.[...] You just kind of get to know them and know their dogs and the routine and also. Makes you feel a little more connected.” (PNS Interviewee 1)

Impacts from the pandemic also came up multiple times as an issue that impacted interviewees' feelings of wellbeing in their work-from-home workspace. Predominately, the frustrations focused around the lack of choice and being forced to work from home. For example, one interviewee stated “I would say right now, no, I don't feel a sense of well-being, and that's because I don't have choices. I would very much like to have the choice to be able to go into work or to be able to even go work from a coffee shop. But right now, we don't have that choice. The most choice you have is to move from one room to the other.” (PNS Interviewee 1)

The extended period of being confined to home also frustrated some interviewees. One individual described the lovely nature view out of her windows, but then lamented “It's the same view that you have been looking out for six months.” (PNS Interviewee 1). Finally, statements from a couple

interviewees suggest the pandemic was a constant outside stressor, preventing normal life from progressing. When describing artwork hanging in her home collected while travelling, one interviewee stated, “It reminds me of the fact that I can't travel and that I have canceled, you know, so many travel plans and so it's actually probably more of a reminder of everything that we've lost or, you know, are missing out on... And things that I wish I could be doing. And I'm not.” (Fem Interviewee 2)

Aside from issues due to the pandemic and isolation, interviewees frequently discussed the concept of work/life separation or work/life balance from both a positive and negative perspective. Some individuals mentioned that they disliked the lack of separation between their workspace and their home space and saw the two elements in their life as becoming blended or blurred. One interviewee described, “[I]t feels like, work has bled into my everyday life. There's no... There's no physical boundary of coming or leaving work that creates that balance and separation.” (Fem Interviewee 2). Others also noted a lack of transition between work-life and home-life and feeling like they took less breaks when working from home. However, some interviewees described being able to create barriers between their work and home lives by assigning physical spaces, such as an office or a desk, to their work and keeping the rest of the house separate for their off time. This enabled them to view working from home more positively. Furthermore, some individuals were able to achieve more balance in their life by working from home. In particular, one interviewee commented that being forced to work from home has “been an eye opener to what I was missing” (Fem Interviewee 8) and has enabled her to now have more balance in her life because she did not need to spend time commuting. Overall, the results were mixed regarding the work/life dynamic and depended on individual circumstances.

Chapter 7: Discussion

This research study sought to examine the relationship between biophilic design in the home work environment and feelings of connectedness to nature and wellbeing for professional workers. These relationships were explored through a quantitative survey that compared connection to nature

and wellbeing with photographs of people's work-from-home environments and renderings of imagined work-from-home environments. Additionally, the study used qualitative interviews to provide support and deeper insight into the survey results. This mixed methods approach was highly useful for understanding individuals' perceptions of their work-from-home workspaces and how that related to their feelings of wellbeing and connection to nature. It was also beneficial for identifying inconsistencies in the research which suggest there were limitations in the study methods that should be resolved in future research. Ultimately, the goal of the study was to determine what biophilic elements are most critical for including in office environments in order to support the psychological health of office workers. Therefore, the result of this research was the development of design recommendations for use in home offices as well as shared workplaces.

7.1 Biophilic Design in Participants' Workspaces – Hypotheses 1 & 2

The first hypothesis, that a greater presence of biophilic design in the work-from-home environment would be associated with higher levels of wellbeing, was not supported by the results of the survey. The lack of a statistically significant relationship between the rating for amount of biophilic design and score on WEMWBS suggests that the biophilic design in the work environment was not related to wellbeing. This is incongruent with findings from the reviewed literature that suggests at least some types of biophilic design interventions support wellbeing (Dreyer et al., 2018; Gillis and Gatersleben, 2015; Gullikson, 2010; Sanchez et al., 2018). It is also inconsistent with the findings from the interviews in which the majority of people stated they felt wellbeing in their workspace and cited reasons such as daylight and access to views or the outdoors. It is possible that the interview participants simply believe they feel wellbeing due to biophilic elements in their space when they actually do not; however, there may have been several factors in this study which contributed to the differing outcomes. One significant factor, which may have impacted the measurements of wellbeing, is the global pandemic which had only recently begun at the time the study was conducted. As was

demonstrated in the interviews, the pandemic and associated isolation of working from home under social-distancing orders weighed heavily on the minds of the study participants. Furthermore, the pandemic created a situation in which participants were forced to work from home, sometimes against their will. The stress from the pandemic, isolation, and lack of choice regarding their situation may have had negative effects on participants' wellbeing and obscured positive associations with biophilic design.

Furthermore, it is possible that the panoramic photographs of the work-from-home environments failed to adequately capture the participant's holistic experience of their physical work-from-home workspace and consequently the score for amount of biophilic design may fail to account for the entire impact of the physical space. In contradiction with the survey, employees indicated in interviews that they generally do feel a sense of wellbeing in their work-from-home workspace and pointed to biophilic elements, such as windows, animals, plants, and daylight, as important contributors to that feeling. The relationship between wellbeing and biophilic design in the work-from-home workspace and shared workspaces bears further investigation.

On the other hand, the second hypothesis, that a greater presence of biophilic design in the work-from-home environment would be associated with higher levels of connectedness to nature, was supported by the results of the study. The statistically significant correlation between the rating for amount of biophilic design and score on CNS suggests that the biophilic design in the work environment is related to people's feelings of connection to nature. Interviewees provided further support for these results by citing views out of windows, availability of plants, and ease of access to the outdoors as elements of the work-from-home workspace that made them feel connected to nature. These findings are in alignment with what has been found in the reviewed literature: that exposure to nature and biophilic design is associated with higher levels of feelings of nature connectedness (Bruni et al., 2008; Kahl & Mayer, 2016; Mayer & Frantz, 2004; Pennisi et al., 2017). Biophilic design elements in the interior environment may have a similar relationship with nature-connectedness as outdoor nature.

Unfortunately, because this was not an experimental study, the direction of the relationship between feelings of connectedness to nature and the presence of biophilic design in the home office was undetermined. It is unclear if the presence of biophilic design in the work from home office leads to greater feelings of connection to nature, or if individuals with higher levels of nature-connectedness simply decorate with more biophilic design elements than their counterparts. Alternatively, it may be a mutually reinforcing relationship.

Interestingly, the results of the survey suggest the positive relationship between amount of biophilic design and connectedness to nature is present only for women. This is especially worth noting since there were no significant differences between genders for age, neighborhood density, or exposure to outdoor nature. Previous studies have also found that women and girls are more likely to demonstrate stronger feelings of connection to nature than men and boys (Dean et al., 2018; Müller et al., 2009; Rosa et al., 2020), so this difference may be due to societal gender roles. However, it is still surprising that the relationship in this study between biophilic design elements and connection to nature was not at all significant for men. This finding may be due to specific features of the study population. For example, the firm that was surveyed features a high number of women as interior designers. The women who participated in the study may have fallen into this job category and consequently were more familiar with the benefits of biophilic design and/or were more active in decorating their work-from-home workspace with biophilic elements than the men. Unfortunately, due to privacy issues, job titles were not collected in the study so this postulation cannot be confirmed.

7.2 Biophilic Design Elements in Workspace Renderings – Hypotheses 3, 4, & 5

The renderings of imagined home workspaces in the survey provided the researcher an opportunity to analyze which types of biophilic elements were perceived as most effective at supporting feelings of connection to nature and wellbeing, represented by feelings of relaxation and cheerfulness.

The results of the survey provide support for Hypothesis 3, that biophilic elements that enable direct experiences of nature will be rated as more effective at connecting people to nature than biophilic features that enable indirect experiences of nature. Biophilic elements which provide direct experiences of nature, including the windows to both the city and the yard, indoor plants, and the green wall, were rated as significantly more effective at enabling feelings of connection to nature as compared to biophilic elements which provided indirect experiences of nature (wood wall, nature painting, vine wall paper) or no experiences. These results align with previous research which found biophilic design elements that enable direct experiences of nature may be effective in supporting health and wellbeing benefits (Gillis and Gatersleben, 2015). Within the direct experiences of nature category, the window to the yard was the most highly rated biophilic element and provided the greatest perception of connection to nature, followed by indoor plants. These findings were also supported in the interviews by frequent statements by the interviewees which cited windows, daylight, and views to the exterior as favored features in their work-from-home workspace and important to their feelings of connection to nature in the space. This again aligns with previous studies which suggest windows with views to nature are most consistently found to have benefits for office workers (Change & Chen, 2005; Dreyer et al., 2018; Leather et al., 1998). Overall, this suggests that office workers should be provided with a window to an outdoor nature view when possible. Furthermore, it is important to consider that biophilic design elements that provide indirect experiences were also rated more highly than the environment with no experience. In situations when direct experiences are not possible, biophilic elements that provide a nature proxy may still be helpful in enhancing nature-connectedness for employees.

Finally, there was a slightly significant interaction between how individuals rated the effectiveness of the biophilic elements at encouraging connection to nature and the variables of age and position. Small sample sizes within each group suggest that confident conclusions cannot be drawn about this interaction and further investigation is required; however, in this study, individuals older than

60 felt that the non-window elements were noticeably less effective at enabling connection to nature than those in other age groups. The reason for such an effect is unclear; however, it is possible that sensory limitations associated with the aging process may have been a factor (Schumm et al., 2009), suggesting that subtle biophilic elements may not be as effective for that age group.

Hypothesis 4, that biophilic elements that enable direct experiences of nature will be rated as more effective at enhancing relaxation than biophilic features that enable indirect experiences of nature, was partially supported by the findings from this study. While direct experiences of nature were rated more highly than indirect experiences, the condition in which no biophilic design was present was rated most highly overall. Breaking down the categories, the results indicate window to the yard was again rated most highly, but that it was closely followed by the “nothing” or “no experience” condition as most perceived to enable relaxation. This is a very surprising result which is inconsistent with the reviewed literature, which suggests exposure to nature promotes relaxation more so than built environments (Scopelliti et al., 2019). One possible explanation for this result may be that the survey population primarily consisted of architects and designers who have a greater appreciation for minimalistic settings than the general population. Architects have been found to have different aesthetic preferences than non-architects (Devlin & Nasar, 1989; Ghomeshi & Jusan, 2012). Alternatively, it might be possible that study participants simply found the “nothing” condition to be relaxing because it consisted of minimal distractions. Another partial explanation for this finding lies in the interaction with position at the firm in which the “Hourly, Intern” position rated the No Experience environment as particularly relaxing or calming. However, there were only three individuals in the intern group and the limited data may not be representative of the entire sub-population and may have skewed the results of the study. A larger sample size would be needed to feel confident making conclusions about this finding. It is also worth noting that individuals in Senior Leadership (VP, AVP) positions provided less variability in their ratings between biophilic elements, though the cause of this effect is unclear.

Similar to Hypothesis 3, the results of the study supported Hypothesis 5. As expected, elements that enabled direct experiences of nature were rated as more effective at enhancing cheerfulness than those which enabled indirect experiences. Additionally, all biophilic elements were rated more highly than the environment with no experiences. These findings align with those of previous researchers who found that direct experiences of nature are most effective at enhancing wellbeing (Change & Chen, 2005; Dreyer et al., 2018; Gillis and Gatersleben, 2015). Breaking these findings down further within the categories, the results also indicate the window to the yard was rated most highly, followed by indoor plants. This suggests windows to the yard and indoor plants are important biophilic elements to workers in encouraging cheerfulness. Insights from the interviews provide additional support for this as well, since daylight and views were consistently mentioned as aspects of their workspaces that the interviewees enjoyed the most. Again, this aligns with previous studies, which suggest views to the outdoors are particularly successful at promoting higher levels of wellbeing and satisfaction with environmental conditions (Aries et al., 2010; Esch et al., 2019; Gilchrist et al., 2105; Leather et al., 1998), and provides support for providing office workers with windows and indoor vegetation whenever possible. The ratings for the remainder of the biophilic elements were all similar, but still greater than the “nothing” environment. These elements may be beneficial to include in office environments to enhance the perception of cheerfulness when windows or plants are not available.

When considering the findings related to Hypotheses 3, 4, and 5 together, a pattern emerges that suggests certain biophilic design strategies may be more important to include in office environments than others in order to support perceptions of wellbeing and connection to nature. (Refer to Figures 7-1 and 7-2 for graphs depicting a summary of the ratings across groups.) With the exception of the rating for No Experience within the relaxed / calm group, the results align with each hypothesis and suggest biophilic elements that enable direct experiences are perceived by employees as most effective. Therefore, including biophilic elements that enable direct experiences to nature in office

environments should be prioritized whenever possible. In particular, providing views to outdoor natural environments should be considered a critical strategy in enhancing perceptions of work spaces since the environment that depicted the window to the yard was rated as most effective within all three groups. Following views to natural scenes, indoor plants are a favorable secondary strategy, then views to non-natural scenes. Biophilic elements that provide indirect experiences are still viewed as more effective than no experience for enhancing feelings of connection to nature and cheerfulness. Therefore, if direct experiences are not possible, indirect experiences should be utilized in workplace design.

Figure 7-1

Mean Score for Each Psychological Measure According to Type of Biophilic Experience

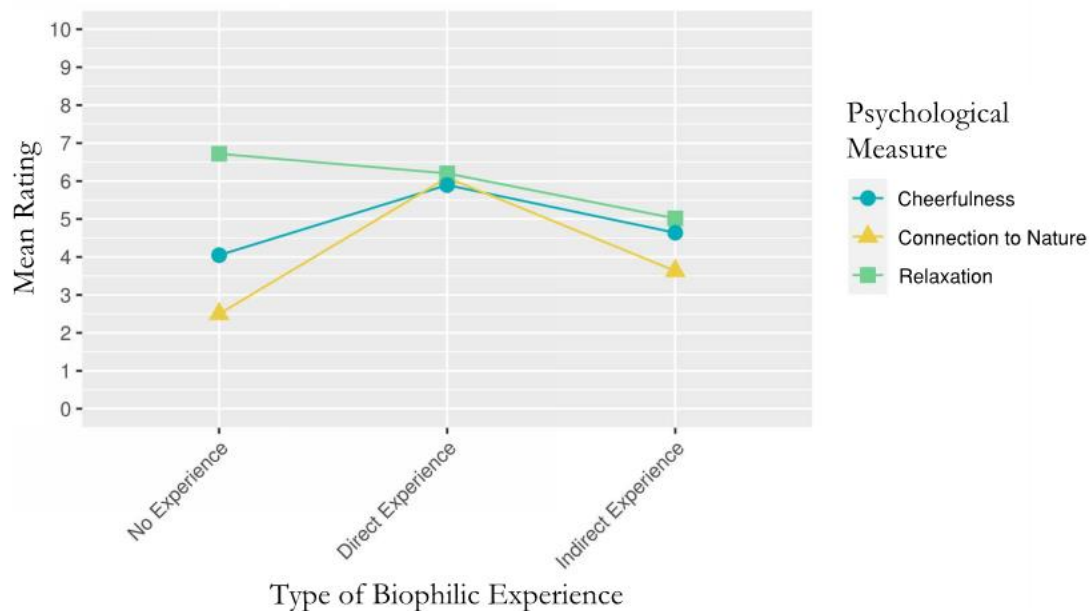
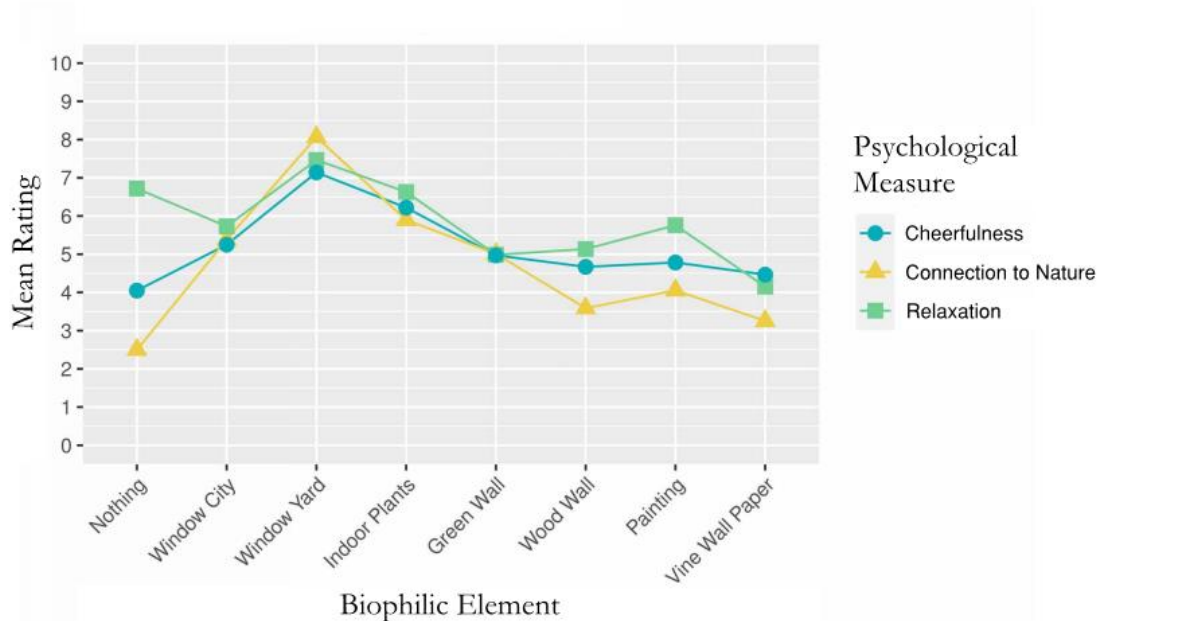


Figure 7-2

Mean Score for Each Psychological Measure According to Biophilic Element



7.3 Limitations & Recommendations for Future Research

Similar to most research, this study faced several limitations. First, the panoramic photographs used to study the work-from-home workspace only captured a portion of the environment. This means there may have been additional biophilic elements in the space that were not captured, or conversely, that biophilic elements were over-represented in the photographs as compared to the entire environment. Therefore, it is possible the amount of biophilic design in the space was not accurately represented and consequently there may be inaccuracies in the correlation with wellbeing or connection to nature. In future studies, journals or self-report descriptions of the workspace could be used to capture the design elements in the entirety of the space. Alternatively, though it was not possible in this study due to the ongoing COVID-19 pandemic, future studies should consider comparing impacts of different physical locations with varying amounts of biophilic design within holistic environments.

An additional limitation of utilizing photographs for the research was that it precluded the measurement of daylight and non-visual elements such as natural ventilation or nature sounds. It is

possible these elements individually would have had a significant impact on wellbeing or nature-connectedness in addition to the measured visual elements. Furthermore, it is likely that the combination of these elements in conjunction with the visual elements would have created a holistic environment that had an even greater impact on wellbeing and connection to nature than was able to be captured in this research (Chang & Chen, 2005; Dreyer et al., 2018; Kellert & Calabrese, 2015). Again, this could be remedied in future studies by utilization of physical locations which feature holistic biophilic design strategies.

A second notable limitation in this research was the study population. The population was derived from a single firm consisting predominately of architects and designers, whom previous research has suggested may think differently and have different aesthetic preferences than the general population (Devlin & Nasar, 1989; Ghomeshi & Jusan, 2012). Consequently, this may have skewed the results of the study. Additionally, the majority of the study participants were women, especially for the interviews, which may have had affected the results. Furthermore, the participants were predominantly ethnically white and populations of black, indigenous, and people of color (BIPOC) were significantly underrepresented. Due to this, it is likely that the results from this study are limited to white professionals. Future studies should aim to conduct research on biophilic design in the workplace with a professionally and ethnically more diverse population with balanced gender representation.

In addition to these demographic limitations, the study also suffered from self-selection bias. Of the already limited population, it is possible that only those already interested in sustainable design practices and/or biophilic design agreed to participate in this study. This may have skewed the data due to their preconceived awareness of the purported relationship between exposure to nature and wellbeing. Drawing from a wider population and using random selection and random assignment would help to prevent this issue in future studies.

Finally, the COVID-19 pandemic was a significant limitation that may have affected the results of this study. In addition to the inability to conduct in-person research, the pandemic likely also affected the psychological states of the study participants and consequently impacted the results of this research (Rosenfeld et al., 2020). While the pandemic affected everyone across the study population regardless of location, the severity of the impacts of the pandemic varied widely by region, economic status, type of housing, and other factors. In particular, the pandemic likely affected the participants' measurements of wellbeing due to increased stress, limits on freedom of choice, and increased loneliness from lack of exposure to others. Therefore, while this research may be relevant for crisis-like situations, future research should be conducted during a less stressful time period in order to provide a baseline understanding for how biophilic design impacts employees' connection to nature and wellbeing under typical conditions.

The COVID-19 pandemic also affected this study by forcing it to focus solely on individuals working from home. While this provided an excellent opportunity to study work-from-home workspaces, as previously mentioned, it is also a limitation since almost no professionals were working from offices which could have been used for comparison. The work-from-home environment is similar to offices in that it is a physical space, typically with a desk and a computer, where individuals are conducting prolonged hours of focused tasks. Because of this, the findings from this study could arguably be extended to standard office spaces. However, there are several key differences between the environments that are worth noting. To begin with, a shared office is a social space where employees interact with other people. This would undoubtedly have a different effect on employees' wellbeing than home workspaces, as was often suggested in the interviews. Additionally, when working from home, employees can typically set up a space exactly how they want and control aspects of the physical environment such as temperature or noise. In fact, because people often set up their homes according to their preference to suit their comfort and wellbeing, biophilic design might be less important in a

work-from-home environment than an office space. This level of control and choice is not present in a typical office environment, especially in the modern-era of the open-office floor plan. Finally, it is possible that an employee may experience more distractions when working from home than when in an office. These key differences between offices and work-from-home workspaces may affect the applicability of the findings from this study to broader workplace environments.

These issues of choice and control, viewed through a lens of equity, also add a layer of complication to studying the work-from-home environment. Because a home often reflects financial means, individuals “higher up on the ladder” at a company may have a greater ability to select an appropriate home workspace and customize it according to their needs. This may even affect access to nature since homes near natural areas are often in more desirable locations and are typically more expensive. An intern level employee may not have had much choice in terms of nature access or square footage when selecting an apartment they could afford. Because of this, intentional biophilic design within an indoor space, especially with elements such as plants and images of nature, may be more critical for lower-level employees since it is an aspect of their home space that they can control. With these considerations in mind, a standard office with biophilic design elements may actually be a more equitable environment than home workspaces due to the significantly reduced variation in type of space that employees would experience. It is still possible for the CEO to have the corner office and an intern to have a desk on the open floor, but they would be in the same location and experience roughly the same aesthetics. Overall, a high amount of differentiation will always be a limitation when studying a work-from-home workspace unless the population was limited to a group of individuals working at the same level on the same type of work within similar buildings. One way to address this in a future study may be to assess a cohort of college students attending university remotely within a dorm. Otherwise, studying the physical environment of a typical office space may be more effective in determining how biophilic design in a workspace affects wellbeing and connection to nature.

In addition to the alternative strategies suggested above to address limitations in this study, there are two other recommended avenues for future research in biophilic design. First, it is possible that there were multiple elements of biophilic design within a study participant's work from home environment that they did not notice. Consequently, it would be appropriate to investigate a person's awareness of biophilic design within their environment and how much of that awareness or attention is necessary to experience benefits from the exposure. Understanding this may provide further information on how to strategically utilize biophilic design within the workplace.

Finally, it may be time for the research on biophilic design to move past establishing the existence of a relationship between biophilic design and psychological benefits and delve into a richer exploration of causal factors. For example, does a biophilic environment enhance feelings of connection directly due to the presence of the indoor nature, or does it improve relationships with others within that environment and thus consequently enhances feelings of connection? Untangling these questions of direct and indirect causality would be the next level of understanding the human relationship with biophilic design.

Chapter 8: Conclusion

8.1 Design Recommendations

Based on the findings from this study, there are three recommended design strategies that may be beneficial to utilize when designing a work space at home or in an office setting. The first two recommendations derive directly from the results of this study. The third recommendation is distilled from a combination of insights from the literature review and the findings from this research.

First, when designing with biophilic strategies, the primary focus should be on providing direct experiences of nature and then supplementing with indirect experiences. Windows with exterior views, indoor plants, and green walls should be incorporated into the design wherever possible and be equitably distributed among employees. These design elements need to be balanced with considerations

such as preventing unwanted glare from windows and ensuring viable long-term maintenance for plants. Ideally, windows would be positioned to the front or side of the employee to provide opportunities to look into the distance and easily view nature while working. Easy access to outdoor spaces can also provide direct experiences of nature which employees will likely find beneficial. After exploring all opportunities for direct experiences of nature, augment with indirect experiences to complete the design. Indirect experiences such as wood textures, images of natural scenes, and nature patterns can also be utilized to some benefit when direct experiences are not possible. Refer to Figure 8-1 below for a depiction of this strategy.

Figure 8-1

Strategy 1 – Provide Direct Experiences of Nature and Supplement with Indirect Experiences.



Note. First, incorporate windows with exterior views, indoor plants, and green walls wherever possible. Then provide elements such as wood textures, images of natural scenes, and natural patterns to complete the design.

Second, it is important to tailor the biophilic design to the preferences of the specific population and allow flexibility for individuals to control the environment and adapt it to their needs. As with any design, appropriate stakeholder engagement strategies should be utilized in order to understand the preferences of the population at hand and accommodate the needs of different genders, ethnicities, and ages. This strategy could be especially helpful in utilizing biophilic design to create an

equitable workplace that also appeals to underrepresented populations such as women and people of color. For example, some individuals, depending on their culture, ethnicity, or where they were raised, may prefer more organized and controlled nature settings while others may prefer more wild aesthetics (Buijs et al., 2009; Kaplan & Talbot, 1988; Vanden Berg & Koole, 2006). In a setting where a diverse population shares a space, ideally common biophilic preferences could be identified, however, another strategy to accommodate varying preferences would be to provide a range of biophilic elements within one setting to enable individuals to select the environment they perceive as most effective. For example, some individuals may prefer a more minimalistic environment without the clutter of indoor plants or artwork because it enhances relaxation and clarity of mind. However, others may prefer a plethora of indoor plants along with large scale nature images that allow them to imagine being outdoors. Providing employees with choices enables them to control their environments and biophilic experiences. Refer to Figure 8-2 below for a depiction of this strategy.

Figure 8-2

Strategy 2 – Tailor the Biophilic Design to the Population & Allow for Flexibility

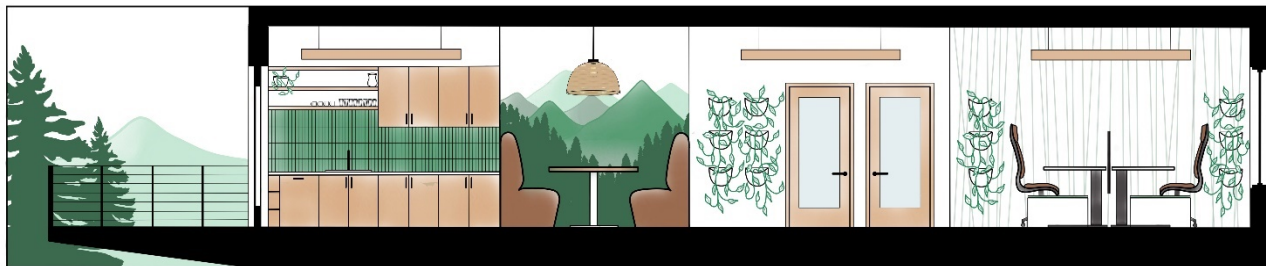


Note. Successful biophilic design can have many different aesthetics. Work with the building occupants to find what type of biophilic design most enhances their wellbeing. For a diverse population, strive to find commonalities or provide multiple biophilic options within one setting to allow occupants to select spaces most suited to their psychological needs.

Finally, designers should aim to create a holistic biophilic environment rather than utilizing one-off biophilic elements. Environments should employ multiple biophilic elements that work together to create a cohesive and well-designed space. For example, weave wood textures, indoor plants, and natural patterns throughout an office that recall the surrounding natural environment outdoors. This will tie in with any views to the exterior that can be provided to occupants and create the feeling of being embedded within a habitat. It will also serve to ground the occupants in the local context and help them establish a connection to place. This strategy could be pursued regardless of the size of the space or whether it is located in an urban, suburban, or rural area. For the surrounding natural environment in an urban area, designers could consider the historically indigenous flora and fauna, regional nature areas, or even nearby parks. Refer to Figure 8-3 below for a depiction of this strategy on one floor of a multistory office building with nature views.

Figure 8-3

Strategy 3 – Create a Holistic Biophilic Environment



Note. A holistic biophilic design incorporates biophilic elements throughout the space to achieve one cohesive, integrated design that serves to connect occupants with their surrounding environment, sustains their exposure to nature, and promotes positive interactions.

8.2 Closing

The results of this study do not suggest that biophilic design in workspaces can lead to a higher connection to nature. However, there appears to be a correlation between the presence of biophilic design and feelings of connectedness to nature. This finding is important since connection to nature

has been tied to both wellbeing and pro-environmental behaviors. Given the current global environmental crisis, along with high rates of mental health issues and stressors like the COVID-19 pandemic, any opportunity to increase pro-environmental behaviors and wellbeing should be explored. This study finds that biophilic design might provide such an opportunity and therefore the relationship deserves further investigation. Ultimately, there is enough empirical evidence across the literature and in this study to suggest biophilic design provides an avenue for utilizing nature and natural languages within the built environment to create a human-focused design and promote a more sustainable world.

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Appendix A: Research Tools

A.1 Warwick Edinburgh Mental Wellbeing Scale

Below are some statements about feelings and thoughts.

Please tick the box that best describes your experience of each over the last 2 weeks.

STATEMENTS	None of the time	Rarely	Some of the time	Often	All of the time
I've been feeling optimistic about the future	1	2	3	4	5
I've been feeling useful	1	2	3	4	5
I've been feeling relaxed	1	2	3	4	5
I've been feeling interested in other people	1	2	3	4	5
I've had energy to spare	1	2	3	4	5
I've been dealing with problems well	1	2	3	4	5
I've been thinking clearly	1	2	3	4	5
I've been feeling good about myself	1	2	3	4	5
I've been feeling close to other people	1	2	3	4	5
I've been feeling confident	1	2	3	4	5
I've been able to make up my own mind about things	1	2	3	4	5
I've been feeling loved	1	2	3	4	5
I've been interested in new things	1	2	3	4	5
I've been feeling cheerful	1	2	3	4	5

“Warwick Edinburgh Mental Well-Being Scale (WEMWBS)

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A.2 Connectedness to Nature Scale

Please answer each of these questions in terms of *the way you generally feel*. There are no right or wrong answers. Using the following scale, in the space provided next to each question simply state as honestly and candidly as you can what you are presently experiencing.

1	2	3	4	5
Strongly		Neutral		Strongly
Disagree				Agree

- ____ 1. I often feel a sense of oneness with the natural world around me.
- ____ 2. I think of the natural world as a community to which I belong.
- ____ 3. I recognize and appreciate the intelligence of other living organisms.
- ____ 4. I often feel disconnected from nature.
- ____ 5. When I think of my life, I imagine myself to be part of a larger cyclical process of living.
- ____ 6. I often feel a kinship with animals and plants.
- ____ 7. I feel as though I belong to the Earth as equally as it belongs to me.
- ____ 8. I have a deep understanding of how my actions affect the natural world.
- ____ 9. I often feel part of the web of life.
- ____ 10. I feel that all inhabitants of Earth, human, and nonhuman, share a common 'life force'.
- ____ 11. Like a tree can be part of a forest, I feel embedded within the broader natural world.
- ____ 12. When I think of my place on Earth, I consider myself to be a top member of a hierarchy that exists in nature.
- ____ 13. I often feel like I am only a small part of the natural world around me, and that I am no more important than the grass on the ground or the birds in the trees.
- ____ 14. My personal welfare is independent of the welfare of the natural world.

A.3 Full Survey Tool



Cornell University

Cornell University

Ithaca, New York

Contact: plh65@cornell.edu

Biophilic Design in The Home Workspace: Associations with Wellbeing & Connection to Nature

Survey Questionnaire

Please take a few minutes to fill out this survey. The main purpose of the study is to investigate the relationship between biophilic elements in the work-from-home workspace and feelings of connectedness to nature and wellbeing. The researchers welcome your feedback. Your survey response will be anonymous. Thank you for your participation.

Set Up Questions

1. Are you currently located at your home workspace?

☐ Yes

☐ No

If "No" is selected – Prompt – Please move to your home workspace before continuing the survey.

2. Is it daytime?

☐ Yes

☐ No

If "No" is selected – Prompt – Please wait until it is daytime to complete this survey.

3. Are you currently experiencing a furlough?

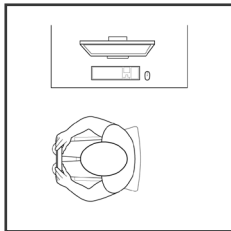
☐ Yes

☐ No

If "Yes" is selected – End of Survey

Quality of Working Environment

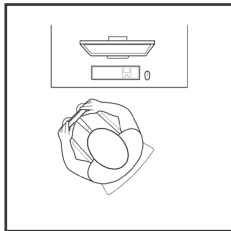
4. PLEASE REMOVE ALL PERSONAL IDENTIFIES FROM YOUR WORK AREA (e.g. diplomas hanging on the wall, personal photographs, etc.) Now, please sit at your work-from-home workstation with your computer monitor off. Please hold your camera (or phone) approximately 12" from your face and take five pictures as shown below. You may take all of the photos at once and then upload each photo to the question with the corresponding diagram. [Click here to visit a WikiHow web page](#) if you need additional instructions on how to get photos from your phone to your computer. Method 4 is recommended.



Picture 1

Please turn 90 degrees to the left of front-facing, take a picture of your view, and upload the picture to this question.

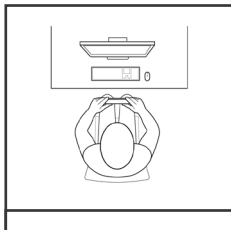
[Click to Upload this Photo](#)



Picture 2

Please turn 45 degrees to the left of front-facing, take a picture of your view, and upload the picture to this question.

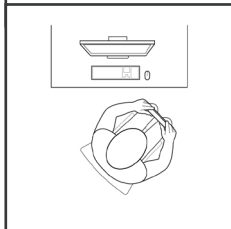
[Click to Upload this Photo](#)



Picture 3

Please face front, take a picture of your view, and upload the picture to this question.

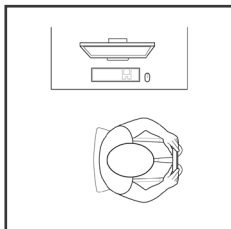
[Click to Upload this Photo](#)



Picture 4

Please turn 45 degrees to the right of front-facing, take a picture of your view, and upload the picture to this question.

[Click to Upload this Photo](#)



Picture 5

Please turn 90 degrees to the right of front-facing, take a picture of your view, and upload the picture to this question.

[Click to Upload this Photo](#)

5. How many hours per week do you typically work in this location?

☐ 8 or less ☐ 9-16 ☐ 17-24 ☐ 25-32 ☐ 33-40 ☐ more than 40

6. This workspace is:

☐ Temporary

Set up intermittently. Only planning to work here for a few days.

☐ Semi-Temporary / Semi-Permanent

Set up for a while. May be working here for a few weeks, but not permanently. Space is possibly shared with other functions (e.g. working at dining or kitchen table which later becomes an eating space).

☐ Permanent

Set up all of the time. Dedicated space for work. Work here whenever doing work at home.

Quality of Working Environment (Continued)

Please rate how strongly dissatisfied or satisfied you are with the following aspects of your current home workspace.

7. Overall Configuration (e.g., size, layout)

Very Dissatisfied _____ Very Satisfied

8. Amount of work surface area

Very Dissatisfied _____ Very Satisfied

9. Amount of storage space

Very Dissatisfied _____ Very Satisfied

10. Ability to adjust fixtures (e.g. worksurface height, adjustability of monitor, etc.)

Very Dissatisfied _____ Very Satisfied

11. Comfort of furnishings (e.g., chair, computer, equipment, etc.)

Very Dissatisfied _____ Very Satisfied

12. Aesthetics / appeal (e.g. colors, textures, etc.)

Very Dissatisfied _____ Very Satisfied

13. Visual privacy

Very Dissatisfied _____ Very Satisfied

14. Audio privacy (e.g. not being overheard and/or overhearing others)

Very Dissatisfied _____ Very Satisfied

15. Ability to concentrate without distraction

Very Dissatisfied _____ Very Satisfied

16. Natural lighting (e.g. daylighting)

Very Dissatisfied _____ Very Satisfied

17. Ability to adjust lighting to tasks

Very Dissatisfied _____ Very Satisfied

18. Access to a window view

Very Dissatisfied _____ Very Satisfied

19. Overall thermal comfort

Very Dissatisfied _____ Very Satisfied

20. Air quality (e.g. air circulation, odors)

Very Dissatisfied _____ Very Satisfied

21. Overall design of your workspace

Very Dissatisfied _____ Very Satisfied

22. Overall, rate how strongly the design of your work space hinders or enhances your work productivity.

Strongly Hinders _____ Strongly Enhances

23. What are the top three things you like the MOST about your work from home workspace?
(Optional)

24. What are the top three things you like the LEAST about your work from home workspace?
(Optional)

25. On a scale of 0-10 (0-Low, 10-High), please use the sliders to evaluate each work-from-home workspace in terms of how effectively it enables each of the feelings listed below the image.



Connected to Nature? 0 1 2 3 4 5 6 7 8 9 10

Relaxed / Calm? 0 1 2 3 4 5 6 7 8 9 10

Cheerful? 0 1 2 3 4 5 6 7 8 9 10



Connected to Nature? 0 1 2 3 4 5 6 7 8 9 10

Relaxed / Calm? 0 1 2 3 4 5 6 7 8 9 10

Cheerful? 0 1 2 3 4 5 6 7 8 9 10



Connected to Nature? 0 1 2 3 4 5 6 7 8 9 10

Relaxed / Calm? 0 1 2 3 4 5 6 7 8 9 10

Cheerful? 0 1 2 3 4 5 6 7 8 9 10



Connected to Nature? 0 1 2 3 4 5 6 7 8 9 10

Relaxed / Calm? 0 1 2 3 4 5 6 7 8 9 10

Cheerful? 0 1 2 3 4 5 6 7 8 9 10



Connected to Nature? 0 1 2 3 4 5 6 7 8 9 10

Relaxed / Calm? 0 1 2 3 4 5 6 7 8 9 10

Cheerful? 0 1 2 3 4 5 6 7 8 9 10



Connected to Nature? 0 1 2 3 4 5 6 7 8 9 10

Relaxed / Calm? 0 1 2 3 4 5 6 7 8 9 10

Cheerful? 0 1 2 3 4 5 6 7 8 9 10



Connected to Nature? 0 1 2 3 4 5 6 7 8 9 10

Relaxed / Calm? 0 1 2 3 4 5 6 7 8 9 10

Cheerful? 0 1 2 3 4 5 6 7 8 9 10



Connected to Nature? 0 1 2 3 4 5 6 7 8 9 10

Relaxed / Calm? 0 1 2 3 4 5 6 7 8 9 10

Cheerful? 0 1 2 3 4 5 6 7 8 9 10

Connectedness to Nature

Please answer each of these questions in terms of the way you generally feel. There are no right or wrong answers. Using the sliding scale, please indicate as honestly and candidly as you can what you are presently experiencing.

26. I often feel a sense of oneness with the natural world around me.

Strongly Disagree _____ Strongly Agree

27. I think of the natural world as a community to which I belong.

Strongly Disagree _____ Strongly Agree

28. I recognize and appreciate the intelligence of other living organisms.

Strongly Disagree _____ Strongly Agree

29. I often feel disconnected from nature

Strongly Disagree _____ Strongly Agree

30. When I think of my life, I imagine myself to be part of a larger cyclical process of living

Strongly Disagree _____ Strongly Agree

31. I often feel a kinship with animals and plants.

Strongly Disagree _____ Strongly Agree

32. I feel as though I belong to the Earth as equally as it belongs to me.

Strongly Disagree _____ Strongly Agree

33. I have a deep understanding of how my actions affect the natural world.

Strongly Disagree _____ Strongly Agree

34. I often feel part of the web of life.

Strongly Disagree _____ Strongly Agree

35. I feel that all inhabitants of Earth, human and nonhuman, share a common 'life force'.

Strongly Disagree _____ Strongly Agree

36. Like a tree can be part of a forest, I feel embedded within the broader natural world.

Strongly Disagree _____ Strongly Agree

37. When I think of my place on Earth, I consider myself to be a top member of a hierarchy that exists in nature.

Strongly Disagree _____ Strongly Agree

38. I often feel like I am only a small part of the natural world around me, and that I am no more important than the grass on the ground or the birds in the trees.

Strongly Disagree _____ Strongly Agree

39. My personal welfare is independent of the welfare of the natural world.

Strongly Disagree _____ Strongly Agree

Wellbeing

Please answer each of these questions in terms of your experiences over the past month. There are no right or wrong answers. Using the sliding scale, please indicate as honestly and candidly as you can.

40. I've been feeling optimistic about the future

None of the time _____ All of the time

41. I've been feeling useful

None of the time _____ All of the time

42. I've been feeling relaxed

None of the time _____ All of the time

43. I've been feeling interested in other people

None of the time _____ All of the time

44. I've had energy to spare

None of the time _____ All of the time

45. I've been dealing with problems well

None of the time _____ All of the time

46. I've been thinking clearly

None of the time _____ All of the time

47. I've been feeling good about myself

None of the time _____ All of the time

48. I've been feeling close to other people

None of the time _____ All of the time

49. I've been feeling confident

None of the time _____ All of the time

50. I've been able to make up my own mind about things

None of the time _____ All of the time

51. I've been feeling loved

None of the time _____ All of the time

52. I've been interested in new things

None of the time _____ All of the time

53. I've been feeling cheerful

None of the time _____ All of the time

Background

Please answer all of the following questions.

54. What is your age?

- | | | | | |
|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|
| <input type="checkbox"/> 18-24 | <input type="checkbox"/> 25-29 | <input type="checkbox"/> 30-34 | <input type="checkbox"/> 35-39 | <input type="checkbox"/> 40-44 |
| <input type="checkbox"/> 45-49 | <input type="checkbox"/> 50-54 | <input type="checkbox"/> 55-59 | <input type="checkbox"/> 60-64 | <input type="checkbox"/> > 65 |

55. What is your gender?

- ☐ Male
☐ Female
☐ Non-Binary
☐ Prefer not to state

56. What is your ethnicity?

- ☐ American Indian or Alaska Native
☐ Asian
☐ Black or African American
☐ Hispanic, Latino, or of Spanish origin
☐ Native Hawaiian or Other Pacific Islander
☐ White/Caucasian
☐ Other, please describe: _____

57. What is your highest completed level of education?

☐ High School Diploma

☐ Associate Degree

☐ Bachelor's Degree

☐ Master's Degree

☐ Doctoral Degree

☐ Other, please describe: _____

58. What is your current position at this company?

☐ Hourly, Intern

☐ Staff

☐ Associate or Senior Associate

☐ Senior Leadership (VP, AVP)

59. How long have you worked for this company?

☐ less than 1

☐ 1-5 years

☐ 5-10 years

☐ 10-15 years

☐ 15-20 years

year

☐ more than
20 years

60. Which office location do you typically work out of?

☐ Washington, D.C.

☐ Boston

☐ Los Angeles

☐ Madison

☐ Milwaukee

☐ Minneapolis

☐ Rochester

☐ Sacramento

☐ San Francisco

☐ San Jose

☐ Other, please describe: _____

61. In typical circumstances (not during a global crisis), on average, how many hours per week do you typically work from home? _____ Hours

62. How many hours per week have you (or will you) work from home this week? _____ Hours

63. How many children do you currently have living at home with you that might interrupt your work day?

☐ 0

☐ 1

☐ 2

☐ 3

☐ 4+

64. How many pets do you have in the house that you can interact with from your workspace?

(Count all animals - including those in tanks / cages / aquariums. Please count each

tank/cage/aquarium with fish, hamsters, birds, etc. as 1 regardless of number of animals).

☐ 0

☐ 1

☐ 2

☐ 3

☐ 4+

65. Which of the following demographic descriptions best fits where you currently live?

☐ Urban area (pop. of greater than 50,000 people, with a density of residences, businesses, & services)

☐ Small city or Village (population below 50,000 with a mix of residences and small businesses)

☐ Suburban (lying outside an urban area, with typically single-family homes)

☐ Rural (population below 5,000, with residences spread out and fewer businesses and services)

66. How frequently in the last week have you spent at least 20 minutes in nature?

- | | | | |
|---|---|---|--|
| <input type="checkbox"/> Daily | <input type="checkbox"/> 6 times a week | <input type="checkbox"/> 5 times a week | <input type="checkbox"/> 4 times a week |
| <input type="checkbox"/> 3 times a week | <input type="checkbox"/> 2 times a week | <input type="checkbox"/> 1 time a week | <input type="checkbox"/> Less than once a week |

67. How frequently in the last week did you talk about nature or the natural environment with people in your life?

- | | | | |
|---|---|---|--|
| <input type="checkbox"/> Daily | <input type="checkbox"/> 6 times a week | <input type="checkbox"/> 5 times a week | <input type="checkbox"/> 4 times a week |
| <input type="checkbox"/> 3 times a week | <input type="checkbox"/> 2 times a week | <input type="checkbox"/> 1 time a week | <input type="checkbox"/> Less than once a week |

Additional Feedback

68. Would you be interested in participating in a follow-up interview about this topic? Interview participants will have an opportunity to win one of three \$100 Amazon gift cards in addition to being entered into the drawing for completing this survey.

- ☐ No
- ☐ Yes, please provide your name and phone number: _____

69. Please provide any additional comments. (Optional)

Drawing

70. Now that you are finished, would you like to provide your name and email in order to be entered to win one of four \$75 Amazon gift cards in compensation for completing this survey? *If yes, please select "Yes" below to be redirected to a question where you may enter your contact information. Your information will not be associated with your answers for the rest of the survey.*

- ☐ Yes
- ☐ No
-

A.4 Frame of Reference Images

Score of 1 for Amount of Biophilic Design



Score of 3 for Amount of Biophilic Design



Score of 5 for Amount of Biophilic Design



A.5 Interview Guide

First, go over consent form – Ask them to state consent statement aloud.

Then, “Now I am going to ask you a series of questions about your work-from-home workspace. There are no right answers to any of these questions. Please feel free to just respond with whatever you are thinking or feeling.”

Questions:

1. Please tell me about your work-from-home workspace. Why did you choose that location? How did you design in it to suit your needs? What features or objects did you add to the space?
 - a. Follow up – If they do not mention whether or not they have a window with a view, ask if they do or not.
2. What physical features of your workspace do you like the most? Why?
3. What physical features of your workspace do you like the least? Why?
4. If you could add one physical feature or object to your workspace, what would it be? Why?
5. Is there anywhere else in your home that you sometimes work? Can you tell me about that space?
6. Connection to nature is defined as the extent to which a person considers themselves part of the natural environment (Schultz, 2002). With that in mind, do you feel connected to nature when you are in your work-from-home workspace? Why or why not?
 - a. *Definition will be shared on screen during the zoom session for interviewee to reference.*
7. Are there any physical features of your work-from-home workspace that you associate with feeling a sense of connection to nature? If yes, what are they? If no, why not?
8. Wellbeing is the state in which individuals can realize their abilities, handle everyday stress, work productively, and contribute to the community (Tennant et al., 2007). With that in mind, do you feel a sense of wellbeing when you are in your work-from-home workspace? Why or why not?
 - a. *Definition will be shared on screen during the zoom session for interviewee to reference.*
9. Are there any physical features of your work-from-home workspace that you associate with feeling a sense of wellbeing? If yes, what are they? If no, why not?
10. Do you feel that exposure to nature affects your wellbeing? Why or why not?
 - a. Follow up: How often do you get exposure to outdoor nature? How? If not often, why not?
11. Aside from wellbeing, do you feel that the physical-environment of your work-from-home workspace is meeting your needs? Why or why not?
12. Do you have any additional comments or thoughts you'd like to share?

Appendix B: Survey Results

B.1 Additional Survey Demographics

Table B-1

<i>Age Range of Participants by Gender</i>			
Gender	Age	N	%
Female	18-24	2	3.64
Female	25-29	9	16.36
Female	30-34	11	20.00
Female	35-39	7	12.73
Female	40-44	8	14.55
Female	45-49	5	9.09
Female	50-54	4	7.27
Female	55-59	8	14.55
Female	65+	1	1.82
Male	18-24	2	6.25
Male	25-29	3	9.38
Male	30-34	4	12.50
Male	35-39	4	12.50
Male	40-44	5	15.62
Male	45-49	2	6.25
Male	50-54	6	18.75
Male	55-59	2	6.25
Male	60-64	3	9.38
Male	65+	1	3.12
Prefer not to state	40-44	1	100.00

Table B-2

<i>Participants' Number of Children</i>		
Number of Children	N	%
0	50	56.82
1	14	15.91
2	18	20.45
3	5	5.68
4+	1	1.14


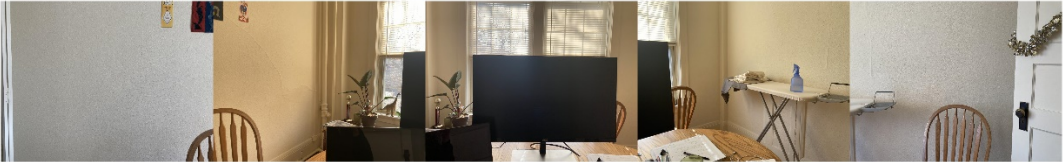
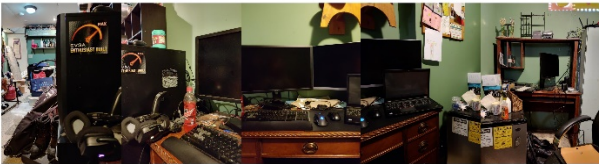

Table B-3

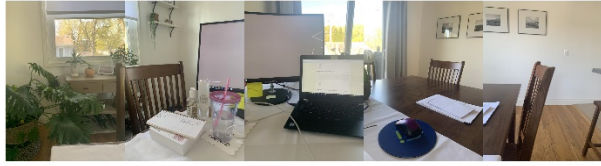
<i>Participants' Number of Pets</i>		
Number of Pets	N	%
0	38	43.18
1	26	29.55
2	17	19.32
3	4	4.55
4+	3	3.41

Table B-4*Frequency of Discussing Nature*

Time Spent Talking about Nature	N	%
Less than once a week	8	9.09
Once a week	10	11.36
2 times a week	10	11.36
3 times a week	8	9.09
4 times a week	13	14.77
5 times a week	9	10.23
6 times a week	6	6.82
Daily	24	27.27

B.2 Work-From-Home Workspaces: Images & Biophilic Design Scores**Table B-5***Panoramic Images of Work-From-Home Workspaces*

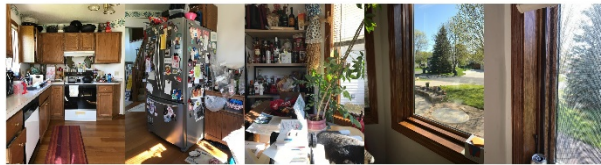
Image	Score for Amount of Biophilic Design
	2.50
	1.74
	1.18
	3.34



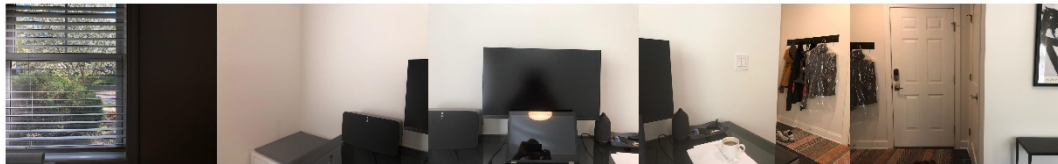
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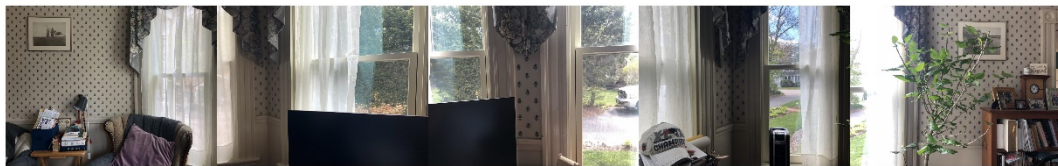
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3.28



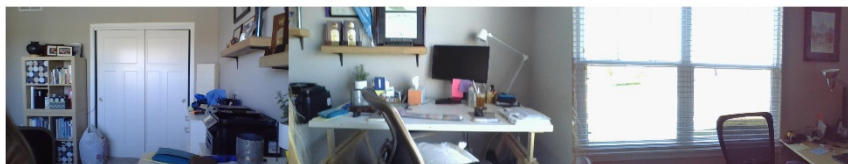
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2.74



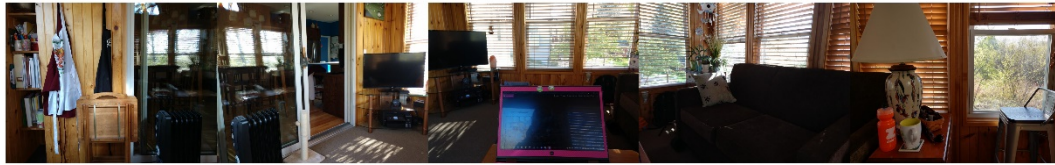
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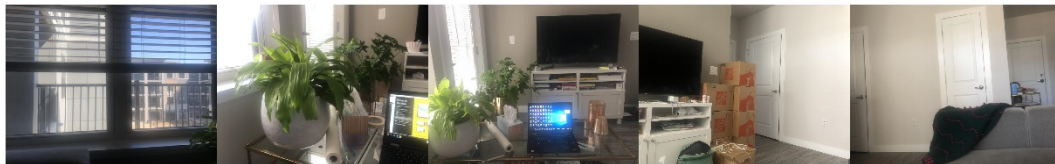
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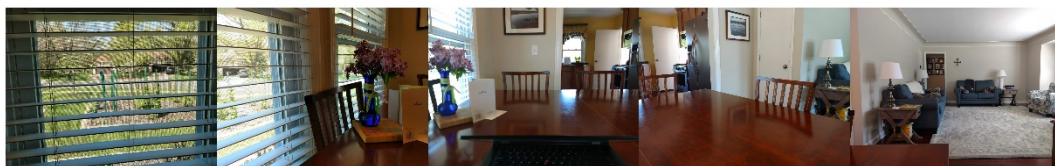
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3.70



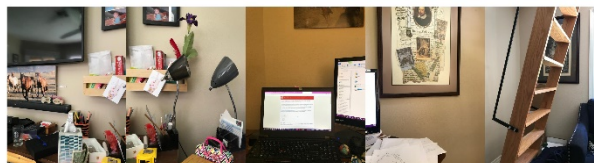
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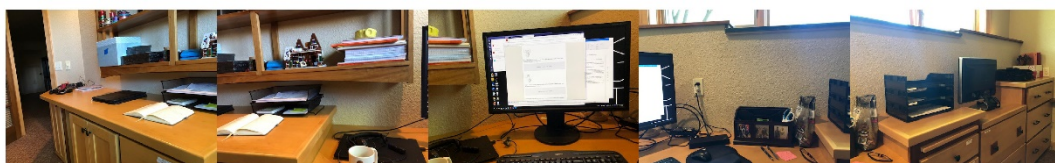
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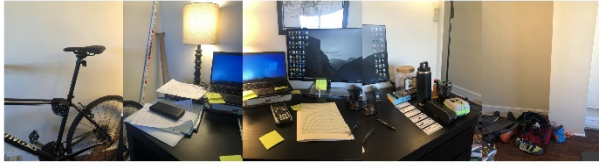
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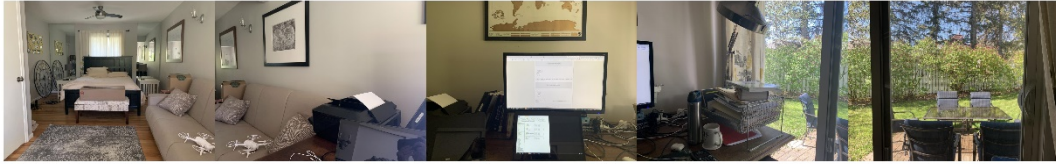
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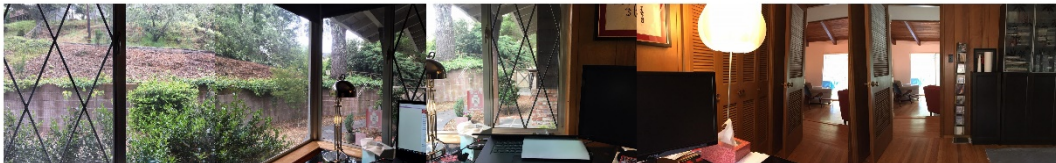
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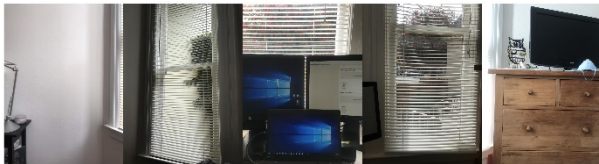
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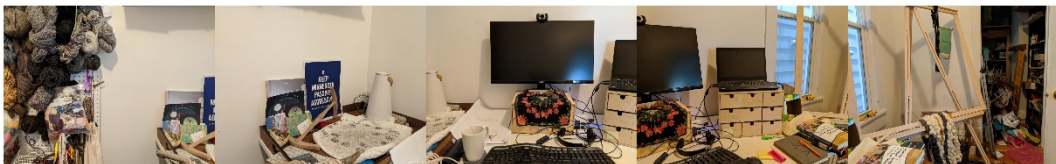
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3.24



2.44



1.20



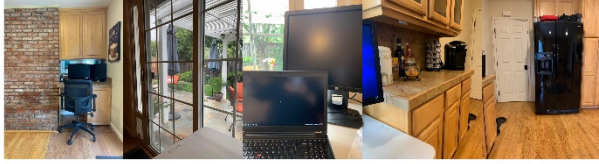
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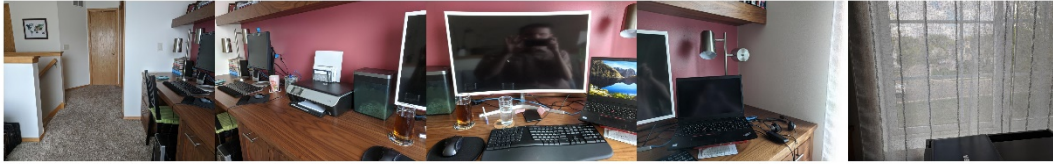
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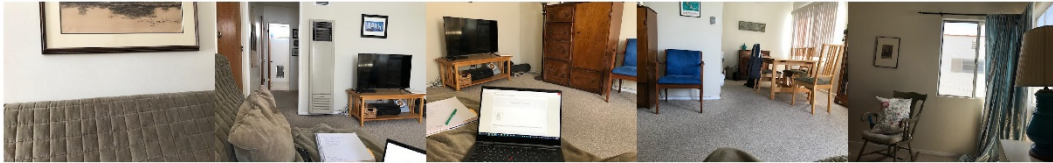
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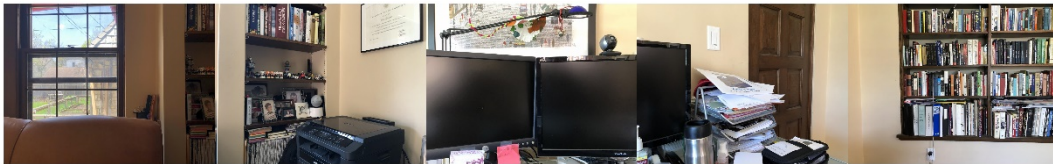
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1.42



1.70



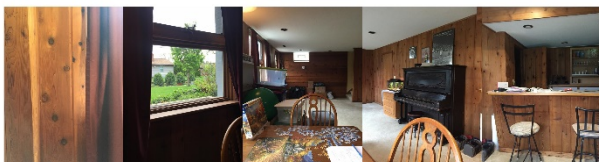
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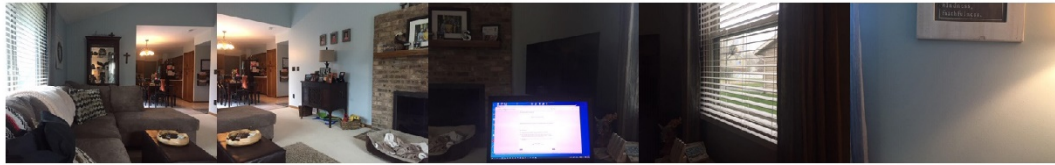
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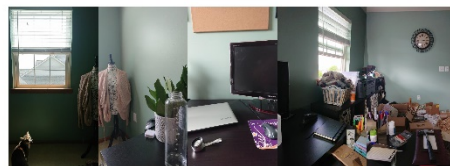
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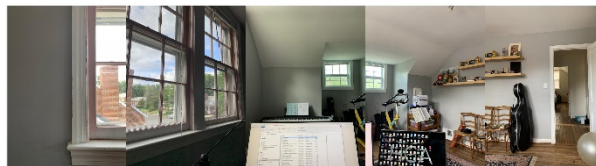
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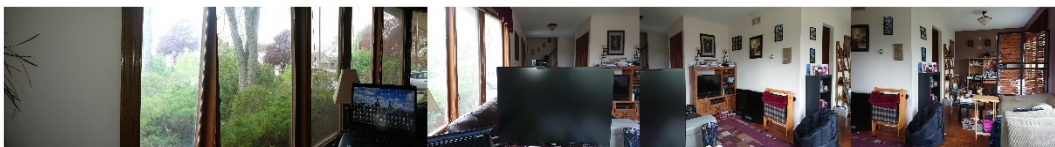
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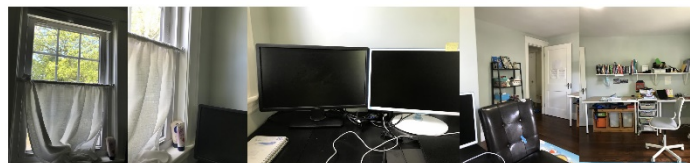
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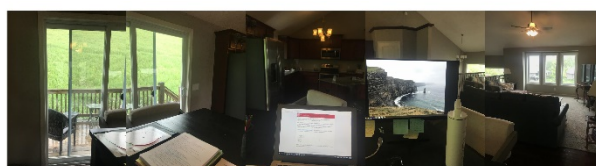
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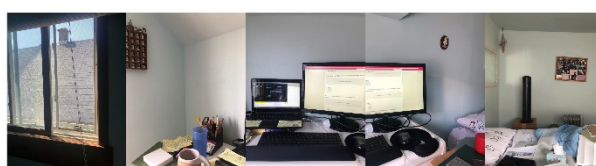
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2.52



1.28



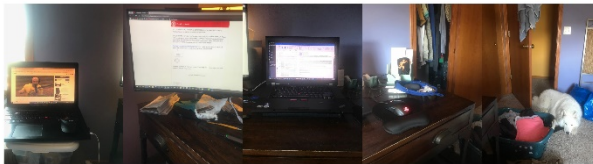
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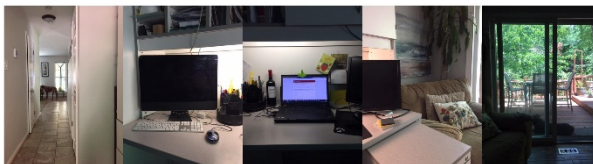
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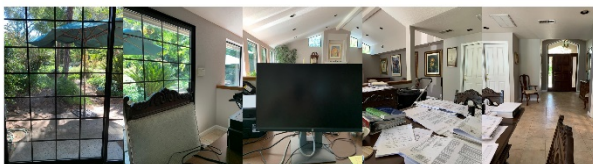
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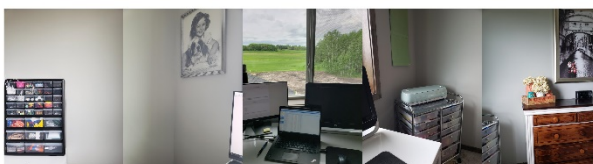
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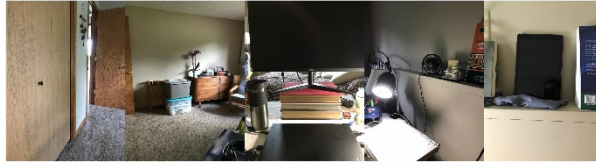
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2.38



4.02



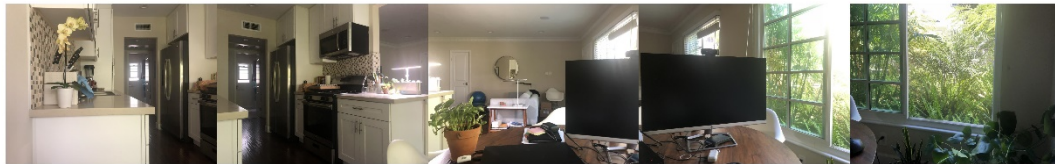
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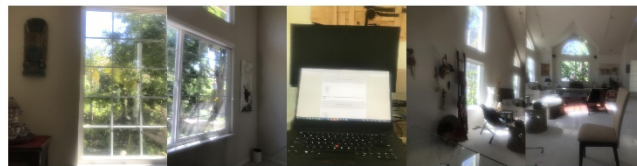
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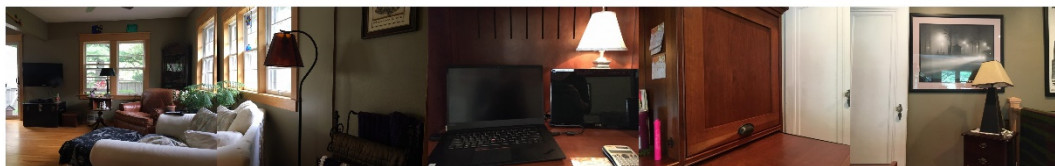
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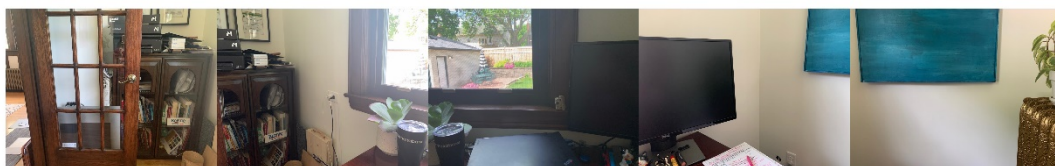
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3.1



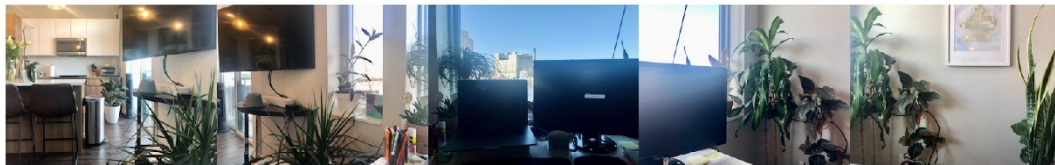
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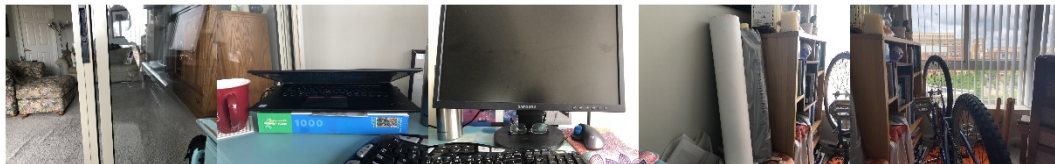
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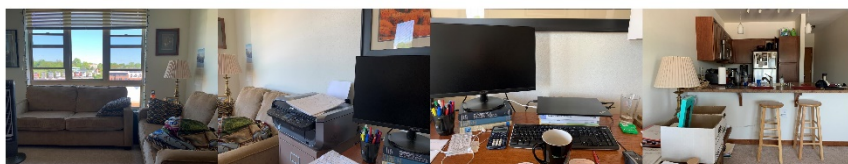
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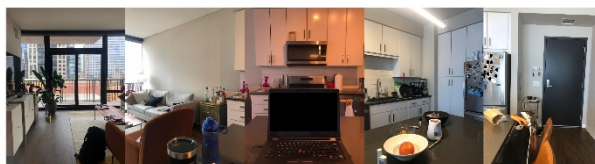
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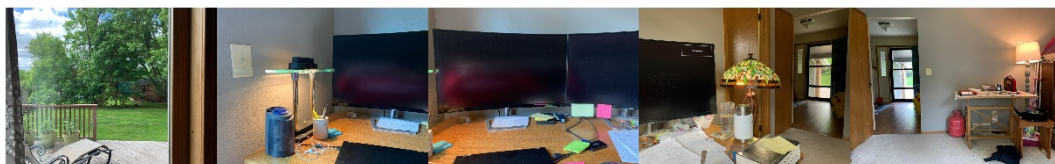
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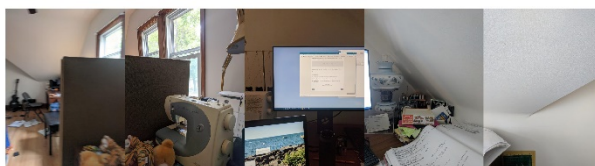
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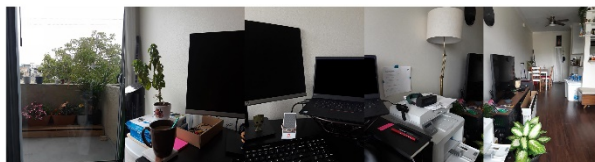
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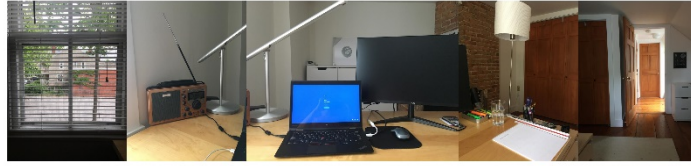
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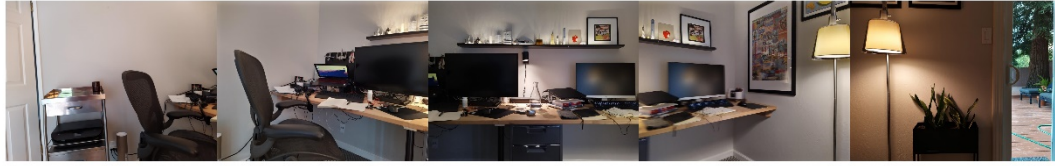
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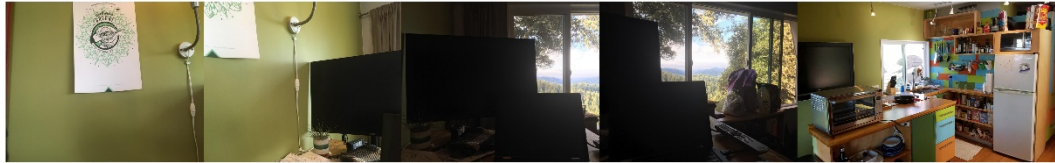
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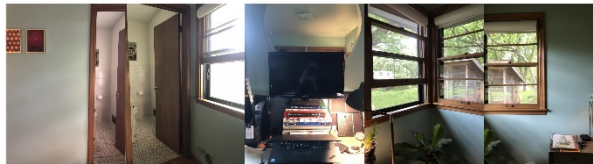
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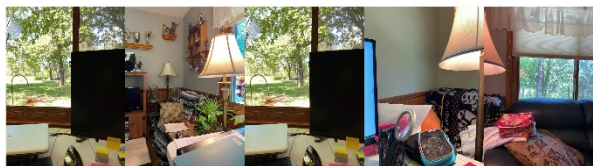
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2.10



2.00



2.84



1.60



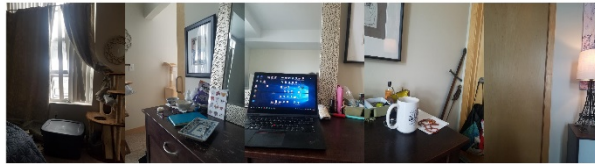
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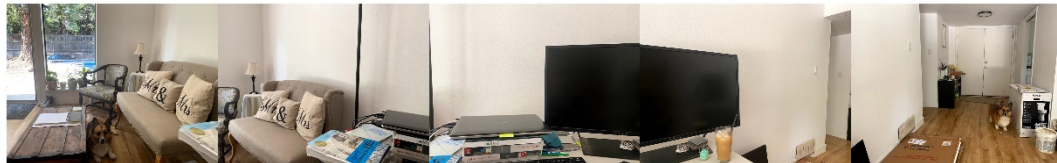
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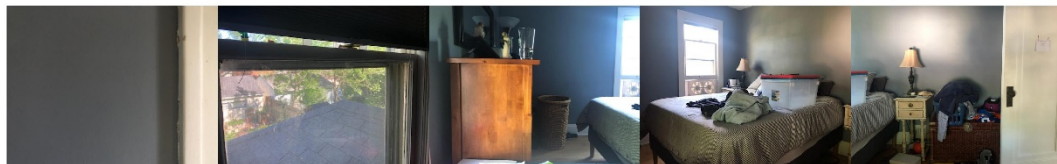
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1.56



1.30



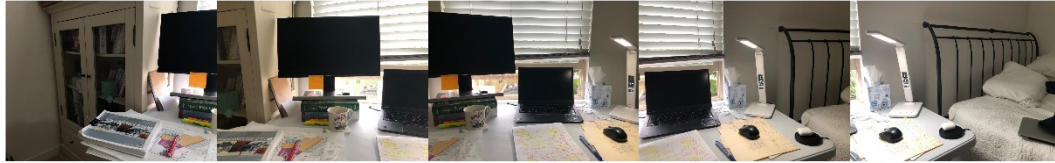
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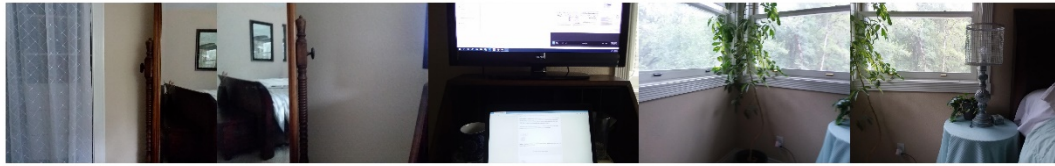
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1.60



1.34



2.00

B.3 Additional Interactions in Survey Results

Figure B-1

Interaction of Perception of Biophilic Design Element supporting Connection to Nature by Position

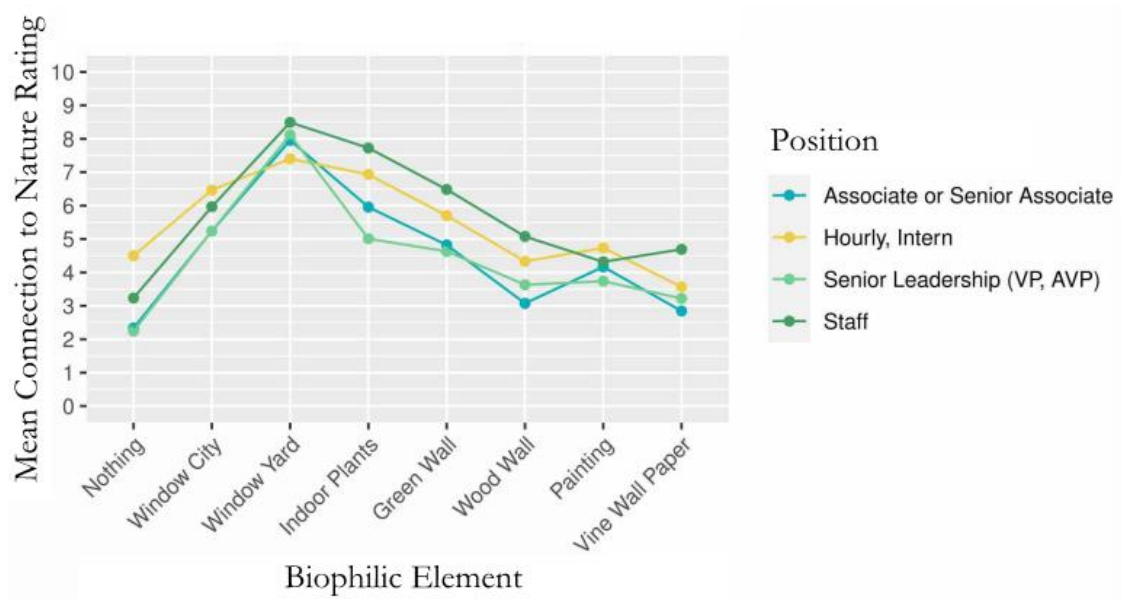


Figure B-2

Interaction of Perception of Biophilic Design Element supporting Connection to Nature by Age

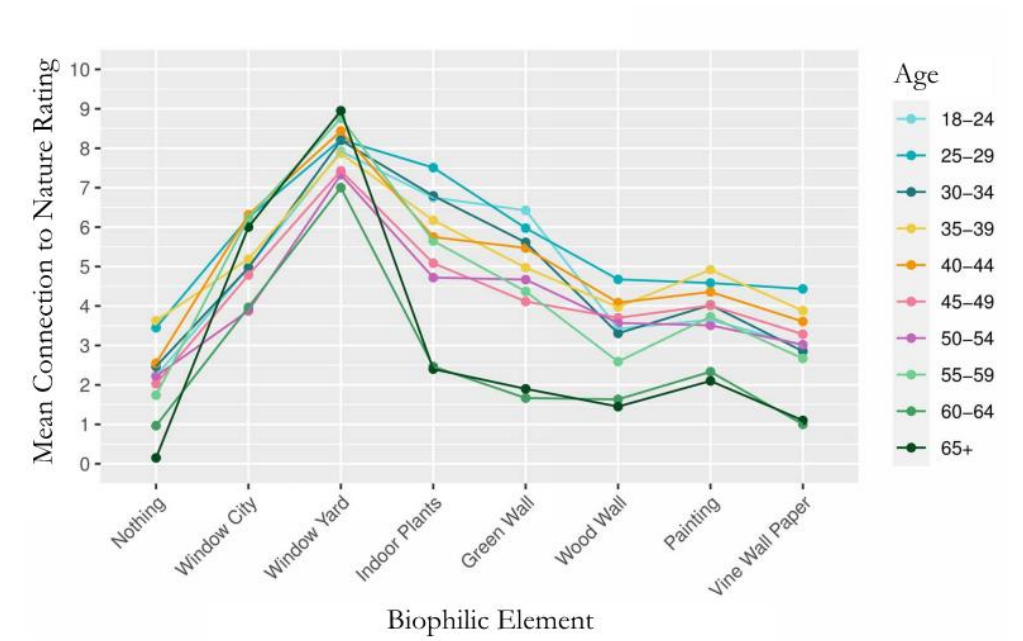


Figure B-3

Interaction of Perception of Biophilic Design Element supporting Cheerfulness by Position

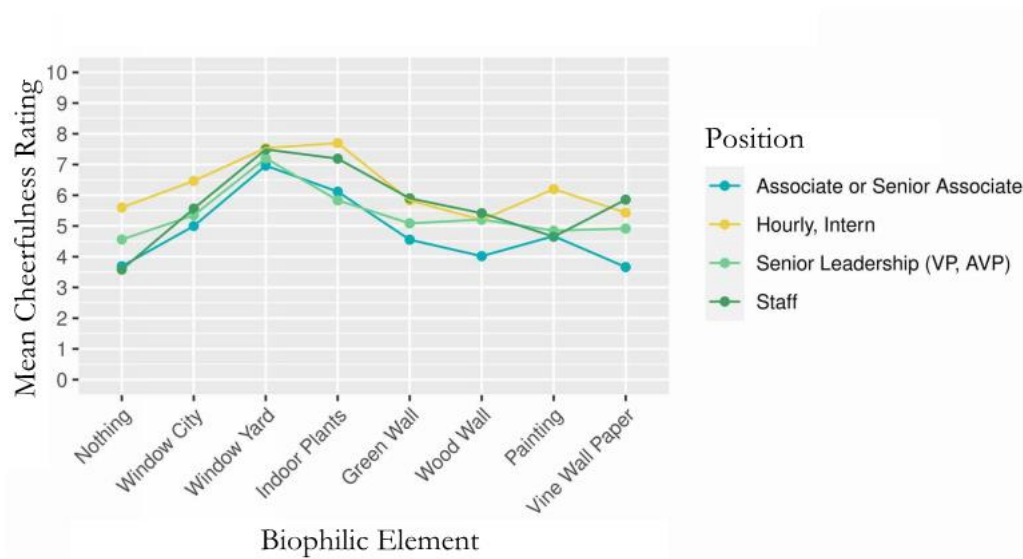
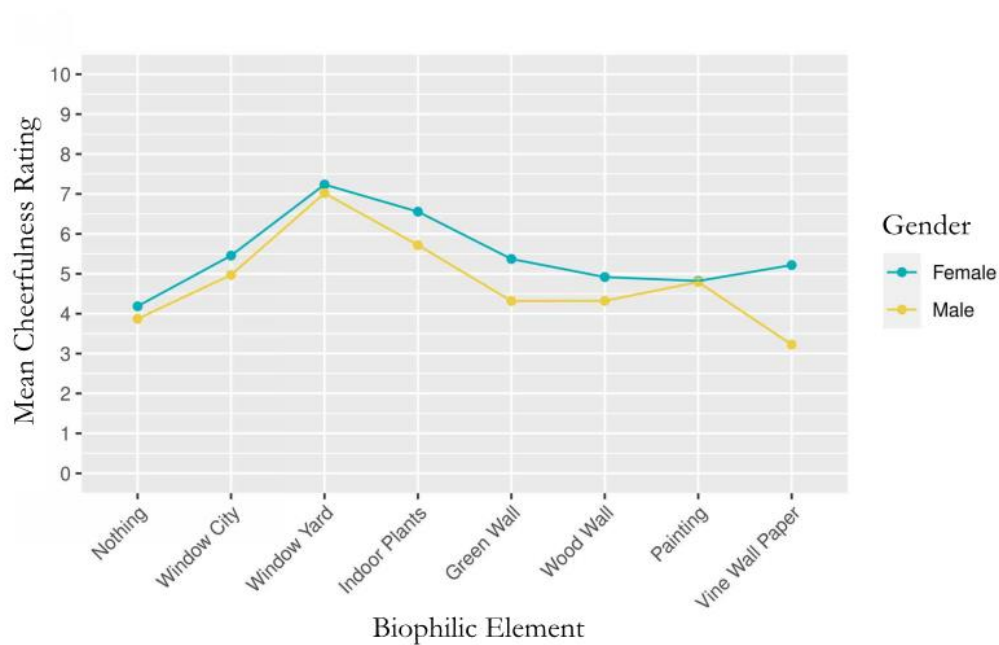


Figure B-4

Interaction of Perception of Biophilic Design Element supporting Cheerfulness by Gender



Appendix C: Interview Results

C.1 Interview Demographics

Table C-1

<i>Age Ranges of Interview Participants</i>		
Age	N	%
18-24	1	9.09
25-29	2	18.18
30-34	2	18.18
35-39	2	18.18
40-44	2	18.18
45-49	1	9.09
50-54	1	9.09
55-59	0	0
60-64	0	0
65+	0	0

Table C-2

<i>Genders of Interview Participants</i>		
Gender	N	%
Female	8	72.72
Male	2	18.18
Prefer not to state	1	9.09

Table C-3

<i>Ethnicities of Interview Participants</i>		
Ethnicity	N	%
American Indian/White	11	100
Asian	0	0
Asian / Latina	0	0
Hispanic, Latino, or of Spanish origin	0	0
White / Caucasian	0	0

Table C-4

<i>Education Levels of Interview Participants</i>		
Education Level	N	%
High School Diploma	0	0
Associate Degree	0	0
Bachelor's Degree	9	81.82
Master's Degree	2	18.18
Doctoral Degree	0	0
Other	0	0

Table C-5

<i>Neighborhood Density for Interview Participants</i>		
Neighborhood Density	N	%
Rural	0	0
Small city or Village	1	9.09
Suburban	6	54.55
Urban area	4	36.36

Table C-6

<i>Interview Participant's Frequency of Exposure to Outdoor Nature</i>		
Time Spent in Nature	N	%
Less than once a week	1	9.09
Once a week	0	0
2 times a week	2	18.18
3 times a week	0	0
4 times a week	1	9.09
5 times a week	2	18.18
6 times a week	0	0
Daily	4	36.36

Table C-7

<i>Interview Participant's Position at Architecture Firm</i>		
Position at Firm	N	%
Senior Leadership (VP, AVP)	2	18.18
Associate or Senior Associate	6	54.55
Staff	2	18.18
Hourly, Intern	1	9.09

Table C-8

<i>Length of Time Interview Participants Work for the Firm</i>		
Years With Company	N	%
less than 1 year	1	9.09
1-5 years	6	54.55
5-10 years	2	18.18
10-15 years	1	9.09
15-20 years	1	9.09
more than 20 years	0	0

Table C-9*Home Office Locations for Interview Participants*

Office Location	N	%
Alexandria / Washington, D.C.	1	9.09
Boston	1	9.09
Los Angeles	1	9.09
Madison	0	0
Milwaukee	1	9.09
Minneapolis	1	9.09
Rochester	0	0
Sacramento	1	9.09
San Francisco	3	27.27
San Jose	1	9.09
Other	1	9.09
Remote	0	0

C.2 Interview Transcripts

Fem Interviewee 1

Interviewer [00:00:01] OK. We're recording now. So as I mentioned in the email, there's some consent materials. Did you have a chance to look them over?

Fem Interviewee 1 [00:00:08] I did. Um....do you want me to read the statement at the end.

Interviewer [00:00:12] Yes, please.

Fem Interviewee 1 [00:00:13] All right. I have read the informed consent materials and have received answer to any questions I have asked. I consent to take part in the study.

Interviewer [00:00:20] Beautiful. Thank you so much. Now I'm going to ask you a series of questions about your work from home space. There are no right answers to any of these questions. Please just feel free to answer however you're feeling, whatever you think is appropriate. That's totally fine. So no right answers. Very important.

Interviewer [00:00:38] Do you have any questions?

Fem Interviewee 1 [00:00:38] Oh, yeah. I have one quick question before you start. So I am not in the same location that I was when I filled out the initial survey. So I don't know if that affects any of your results.

Interviewer [00:00:54] Currently or typically? Like is it just right now or did you move in between?

Fem Interviewee 1 [00:01:00] So I was staying at my parents house when I filled out the survey and I was there for a couple of months and now I'm back at my apartment.

Interviewer [00:01:08] Oh, I see. OK, well. ummm....Trying to decide if it's best....

Interviewer [00:01:18] I think it's best for you to go ahead and just answer about your current workspace. It may adjust the result slightly. I may ask you a couple extra questions that I wouldn't typically ask just to help add some information to compare with. For example, your current apartment. Is it in a sort of urban, rural, suburban, semi-urban area? How would you describe it?

Fem Interviewee 1 [00:01:45] It's pretty urban. It's Somerville, Mass. So it's like near Cambridge. Yeah, I'd say it's definitely part of the Boston area.

Interviewer [00:01:57] OK. So it's very much in the city.

Fem Interviewee 1 [00:01:59] Yeah.

Interviewer [00:02:00] OK, well, that's an important one. So I am glad we covered that. But otherwise I feel like we're probably gonna be OK just going through going through it as best we can here. So.

Fem Interviewee 1 [00:02:10] Just wanted to make sure.

Interviewer [00:02:11] Yeah no... I appreciate you letting me know because that's something that we'll keep in mind. I can talk to my advisor about it. If need be. OK, so can you tell me about your current work from home space and why you chose that location for doing your work in? And did you design it at all to suit your needs or anything along those lines?

Fem Interviewee 1 [00:02:33] Yeah. So I previously didn't have a desk in my bedroom. So since working from home, I did get a desk and had to kind of rearrange my whole room for that. Mostly it's the workplace... the workspace is arranged so ...just so that I can fit every.... All my furniture in here. So I do have three roommates. So working in like common spaces was not really an option. I mean, we have a kitchen table, but just for all the Zoom meetings that I'm on.

Fem Interviewee 1 [00:03:07] It didn't really make sense ...and with my monitor and all that ...to work in common spaces. So I was just trying to make my my bedroom work for working from home.

Interviewer [00:03:18] Yeah, that makes sense. Did you add any features or objects to the space other than the desk in order to make it decorated more comfortably for working from home or anything along those lines?

Fem Interviewee 1 [00:03:32] Well, I got a....I got a monitor that I previously didn't have.

Interviewer [00:03:36] That's great.

Fem Interviewee 1 [00:03:38] I did buy a new rug for my room, which I guess is kind of just trying to update it a bit and change the color scheme. And that's probably it. Everything else is just rearranged.

Interviewer [00:03:54] OK. And it looks like you might have a window in your room.

Fem Interviewee 1 [00:03:59] Yes, I do.

Interviewer [00:04:00] Does it have much of a view?

Fem Interviewee 1 [00:04:02] No, I'm looking at a house that's about six feet away.

Interviewer [00:04:09] Oh. Oh, that's rough. But it looks like you've got some good daylight at least.

Fem Interviewee 1 [00:04:13] Yeah. No, it's it's not bad. It does kind of sidelight my face for zoom calls, which isn't great, but, it's better than not having a window.

Interviewer [00:04:24] So I know you mentioned you're in an apartment?

Fem Interviewee 1 [00:04:25] Mm hmm.

Interviewer [00:04:28] So do you get much opportunity to go outside at all, or is it mostly working in your ...in your room?

Fem Interviewee 1 [00:04:38] We do have a porch. And I've done a little bit of work out there. I typically haven't done much like... I guess like ...hard intense work because I do need my monitor because I'm working in Revit mostly. So I have the ability to go outside and we have Wi-Fi out there. But I really only do it for like casual zoom calls. I guess I could have taken this call out there.

Interviewer [00:05:02] No, that makes sense. So your current workspace that you're working in.... what physical features of it do you like the most?

Fem Interviewee 1 [00:05:13] Yeah, I like....I like that I have all of my stuff and like personal items around me... My plants, I guess, are kind of important to me and it's nice to have those in my workspace.

Interviewer [00:05:28] Can you tell me more about your plants?

Fem Interviewee 1 [00:05:31] Sure. Do you want to see?

Interviewer [00:05:34] Sure you can show me. The audio is more important for my research, but that's fine

Fem Interviewee 1 [00:05:37] Oh, I see. OK.

Fem Interviewee 1 [00:05:39] Well, I have two pathos plants and a spider plant that was outside, but I just brought inside and I definitely think the like... biophilia helps me a lot. I have a lot of plants on my desk at work as well. So having that in my workspace, like I have this small one that's like right at my desk. And that's very.... I like having that in my line of vision.

Interviewer [00:06:10] Are there any physical features of your workspace that you dislike or that you like the least?

Fem Interviewee 1 [00:06:17] I'd say that right now I'm looking at a kind of blank wall with the light in the window behind me, and I kind of wish that I was able to arrange my room so that I was kind of like more facing out the window. So the lighting was better for, like, video calls. So I'd say... And just the size of the room, it's kind of limiting. Like, this is the only arrangement I could really come up with that seemed to work.

Interviewer [00:06:42] Sure. No, that makes sense. Yeah. Apartments are difficult in that way. For sure. For sure. Especially when you live in an urban area. So if you could add... If you could add one physical feature and it doesn't just have to be like an object, but it could be.... A window with a view, for example, or a fan, or it could be, you know, it could be fairly grandiose... If you could add one physical feature or object to your workspace. What would it be and why?

Fem Interviewee 1 [00:07:11] Yeah, I think it would probably be a window. I think both for, like I said, the general lighting, but also I've always... I feel like my plants are kind of....I have to have plants that are... Don't need a ton of direct natural daylight, I have much better lighting in my living room. So I keep most of my stuff out there. But if I could...and had a better spot for it in my room, I think I would prefer to have them in here.

Interviewer [00:07:37] OK, great. So you mentioned the porch, but is there anywhere else in your home or outside of your home that you sometimes work? And if so, can you tell me about that space? Or describe the porch more if that's the main one?

Fem Interviewee 1 [00:07:54] Yeah, I really haven't worked outside of the house except for like I said, I was at my parents' house. They live in the suburbs of Boston, like about an hour away. I was there for like three months, so that was only...But once I got back to my apartment, I really only mostly...say like ninety five percent of the time I'm in my room. My porch is.... I mean, we just have like patio furniture out there. There's a decent view. We do actually have a shared yard with, like other apartments. I've never really worked down there, but it's a nice view I guess.

Interviewer [00:08:35] Can you tell me more about the yard? Anything that's in there, are there nice trees? Are there... Or is it pretty barren?

Fem Interviewee 1 [00:08:44] It's so it's kind of a side yard between like our apartment and the one next to it. I think it used to be a driveway and they probably didn't want to plow the driveway. So they made it the yard. So it's about the size of a driveway, if you can imagine that. There's grass. There's a couple of bushes around the sides. My roommates have some like, tomato plants down there and some herbs, so. And we... Like a little patio. We used to have a grill but then one of my roommates left and she took the grill with her.

Interviewer [00:09:13] Oh, that's disappointing.

Fem Interviewee 1 [00:09:15] Yeah. So it's but I don't know, it's it's a nice place to sit, like especially with COVID and, you know, having being able to see friends that don't live with me. But it's been good to have a space that like we can have people over and like hang out at a distance.

Interviewer [00:09:32] Sure that makes a lot of sense. Yeah the outside space is pretty important right now.

Fem Interviewee 1 [00:09:36] Yeah.

Interviewer [00:09:37] So I'm going to share my screen real quick so you can view a definition. Can you see this?

Fem Interviewee 1 [00:09:48] Yes.

Interviewer [00:09:49] OK. So connection to nature is defined as the extent to which a person considers themselves part of the natural environment. With that in mind, do you feel connected to nature when you are in your work from home space? Why or why not?

Fem Interviewee 1 [00:10:07] I think in some ways I do. I do have a good amount of plants in my workspace, but probably not as connected as if I were to be, like, looking out the window into a forest.

Interviewer [00:10:22] Sure. Sure. So the plants are like they're they're pretty important to your...umm... In your workspace.

Fem Interviewee 1 [00:10:30] Yeah, I would. I would say so.

Fem Interviewee 1 [00:10:32] Great Okay. I am going to stop sharing and then continue with some other questions.

Interviewer [00:10:39] And you sort of already answered this, but I'm just going to ask to sort of follow up. Are there any physical features of your work from home space that you associate with a sense of connection to nature? You mentioned the plants. Is there anything... you want to describe that more? Or is there anything else in your space that you feel like does connect you with nature?

Fem Interviewee 1 [00:11:00] I guess I mean, I guess I'm just looking at like some of my art on the walls and you can see behind me there's this, like, flower painting or it's kind of like a vine. So that that's kind of natural.

Interviewer [00:11:14] Yeah.

Fem Interviewee 1 [00:11:15] Yeah. I don't know. I guess that's kind of it.

Interviewer [00:11:17] It's mostly the plants it sounds like.

Fem Interviewee 1 [00:11:19] Yeah. Yeah,.

Interviewer [00:11:21] Sure. OK. So I'm going to share my screen again. Similar sort of setup where I am going to read you a definition and then ask you a question. So well-being is the state in which individuals can realize their abilities, handle everyday stress, work productively and feel like they're contributing to the community. So with that in mind, do you think you feel a sense of well-being when you're in your work from home workspace? Why or why not?

Fem Interviewee 1 [00:11:54] I think overall, yes, I. I think having the ability to be comfortable in my workspace is really important. I would say, like a sense of community is probably less there just because of working from home and having to interact virtually with everyone.

Interviewer [00:12:16] Can I follow up on that? Do you feel isolated?

Fem Interviewee 1 [00:12:24] At times. Yeah. I mean, I.... So I was on a very... I was on a really big project team where we met really frequently. That project recently ended, like a couple of weeks ago. And ever since then I would say that, like, I have less interaction with, like, the same group of people on a daily basis. So the.... sense that, like, that you would get in a work environment where you see people every day is less..... I've been feeling less recently.

Interviewer [00:12:56] That makes sense.

Interviewer [00:12:58] Yes. So is there anything else about your well-being that you want to mention in terms of how you feel in your space?

Fem Interviewee 1 [00:13:09] I mean, I think others have probably said this, but I think the ability to, like, prepare your own food and being close to the kitchen has helped me a lot. Like not having to spend time in the morning, like planning my lunch for the day and being able to cook things, for myself, like in the middle of the day, I think it's really....something that I enjoy. And oh, I guess in terms of nature, I have been going out a lot more walks than I used to and getting to know my neighborhood more. When I was like in the suburbs, very connected to nature, like where my parents live is very wooded. Now it's less like... It's more a more urban environment, but I've definitely, like, walked around the neighborhood way more than I used to.

Interviewer [00:14:06] So you're saying that having access to that is an important feature of working from home?

Fem Interviewee 1 [00:14:11] Oh, yeah, definitely. I mean, I didn't go on, like, midday walks, really, when I worked at the office. I mean, I would go sit in parks occasionally for lunch, but... Now, I like will go.... I mean, if I... Not every day, but if I have time, I'll go on like an hour long walk.

Interviewer [00:14:30] That's great.

Fem Interviewee 1 [00:14:31] Something that I definitely didn't do before.

Interviewer [00:14:33] That's really nice. So then are there any physical features of your work from space that you associate with feeling well-being? You mentioned a lot of like social connection or being able to go outside. But are there physical features of your work from home space that give you that sense of well-being at all?

Fem Interviewee 1 [00:14:58] Um...Physical features...

Interviewer [00:15:00] I mean, like, you know, like the window or plants or the other objects in your space or anything like that.

Fem Interviewee 1 [00:15:08] Honestly... This is going to sound terrible....I really feel like when I'm working, I'm just looking at my computer and I don't... I'm not really noticing that much around me unless I, like, get up and I'm going to get something. I don't know.

Interviewer [00:15:24] No, that's totally that's totally a reasonable answer. That's that's good to know. All right. Well, it sounds like that the biggest things are really having access to cooking and also being able to walk around outside. That's both really important to you.

Fem Interviewee 1 [00:15:40] Yeah.

Interviewer [00:15:41] Yeah, great. OK. So I just have a few more questions. Do you feel generally that exposure to nature affects your well-being? Why or why not?

Fem Interviewee 1 [00:15:53] Yeah, I think it does. I definitely have found myself being in a better mood after going on a walk outside or, you know, just getting fresh air. I think.....I don't know. I think overall, yes, just... But I don't know if that's tied to physical activity or just the ability to kind of, like, get to know my neighborhood better has been enjoying... Enjoyable for me.

Interviewer [00:16:25] Yeah no, that makes a lot of sense. It's definitely nice to be able to associate more with where you live.

Fem Interviewee 1 [00:16:32] I definitely think I've walked way more around my.... I mean, I discovered like this bike path in my neighborhood that I had no idea. It's like along an old railway. And I kind of had heard of it, but I never been to it. And Iand I recently, like, was walking and I saw signs for it, and I was like "oh I'll just check this out." And then it's this long...[mumbling] or its this long bike path that goes all the way to like Lexington, which is like pretty far out of Boston. And so I and then I was like, oh, OK. Like, I'll try that one day on weekends. Then I like, took a pretty long bike ride and it's just like really nice protected bike path with like trees and lots of activity and, I don't know, nature. So anyways, I, I had no idea existed, but only because I was had all this free time that I was going on these long, aimless walks.... And discovered these things. So I don't know. I think just generally feeling more connected with where I live. And I spent a lot of time like commuting on like public transit before, which I enjoy. But what I was I was kind of like skipping over, I think, a lot of areas of my own neighborhood because I just would...was always going like...I was going to work, home, into Boston, out of Boston. And now because... Like public transit is not....I'm trying to limit my use of that. I'm spending more time like going to restaurants that I can walk to and getting takeout and coffee shops from areas that are closer.

Interviewer [00:18:00] Yeah, no, that makes sense. That's great. That's a great story. I'm very glad that you found the bike. We have something similar near our house. Please excuse my dog. She's a... she's young and likes to whine. All right. So then how often do you get exposure to outdoor nature? And is it just through these walks or is there another mode? Another method through which you get exposure?

Fem Interviewee 1 [00:18:27] I mean, during the week, mostly just walking.

Interviewer [00:18:31] So that's a once a day kind of thing?

Fem Interviewee 1 [00:18:34] Pretty much. I mean, I skip sometimes... I'd say like four to five days a week I'll go on a walk. Definitely on the weekends. I've been doing a lot of biking and hiking just because there isn't a whole lot else to do these days.

Interviewer [00:18:49] Yeah.

Fem Interviewee 1 [00:18:50] So, yeah, I think ...I don't know...I think in this whole quarantine situation, I've been spending a lot more time outside than I used to.

Interviewer [00:18:58] And do you feel like that's.... Have you noticed a change overall? I mean does that help with your stress levels? Do you... have you noticed anything along those lines?

Fem Interviewee 1 [00:19:08] Yeah. I think that like breaking up the day with nature has helped with stress at times.

Interviewer [00:19:16] Great.

Fem Interviewee 1 [00:19:17] Yeah.

Interviewer [00:19:18] And...I didn't mean to cut you off so...

Fem Interviewee 1 [00:19:21] No it's okay.

Interviewer [00:19:23] OK. So then just a couple more questions. Aside from well-being, do you feel that the physical environment of your work from home space is meeting your other needs? In terms of enabling you to be productive or letting you be able to do your work appropriately... Do you feel like it's meeting your needs well? Or is it a struggle?

Fem Interviewee 1 [00:19:46] I think it's meeting my needs. I mean, I have a pretty... I don't have a lot of distractions because I don't have, like, kids or pets, so I don't feel distracted by other things in the environment. It's pretty quiet. I like that the temperature...I can like regulate. That was something I definitely struggle with at work because I am a very.... I tend to get cold very easily. When I'm too cold I, like, can't focus. So for me, that's been great. And I think being able to, like.... I also get really distracted if I'm really hungry. Like, I just don't...I, like, need to eat intermittent... Like throughout the day. So if I'm... So being able to, like... I think temperature and food has helped me focus a lot.

Interviewer [00:20:33] Totally. And does that also give you like a greater sense of feeling control over your choices? Does that help as well?

Fem Interviewee 1 [00:20:42] Yeah, I think so. I mean...Yeah, like it's it's definitely, I would say, the sense of control is good. But yeah.... And like I said too (fumbling words).... Those are the positives. The negative, I think is definitely obvious, like lack of connection to colleagues who you don't work with directly.

Interviewer [00:21:02] Totally. Are there any other negatives that you can think of?

Fem Interviewee 1 [00:21:08] Honestly, no. That's kind of it. I've been having an OK time working from home, to be honest. Aside from the like lack of.... community. I feel like I've been pretty productive.

Interviewer [00:21:20] That's great. I'm glad to hear it. So that's it. In terms of sort of structured questions from me. Do you have any additional comments or thoughts you'd like to share about your space or your experience?

Fem Interviewee 1 [00:21:37] I think that's kind of it. I'm... I definitely... I am happy to help with your thesis, and I know.... It seems like a really cool project. And I.... I remember doing a thesis project, and I know it's like a lot of research and work, so I'm happy to help.

Interviewer [00:21:55] Yeah, it's a lot of work. But I got a good amount of respondents to the survey, and I've got a handful, about 10 percent of the survey respondents I'm going to be interviewing. So there's a lot of data for me to dig through over the next couple of months. And then I will hopefully be able to share it in the early spring with the firm. So then then we'll be able to hopefully learn something from it and implement stuff in our own work from home spaces or for our clients.

Fem Interviewee 1 [00:22:24] Yeah, I know it's definitely a really timely topic and we'll be interesting to see the results.

Interviewer [00:22:28] Great. Thanks. Well, thank you so much for your time. Don't hesitate to reach out if you have any further thoughts or any questions. Otherwise, I really appreciate it.

Fem Interviewee 1 [00:22:39] OK Great. Thanks.

Interviewer [00:22:39] Thank you so much. Take care.

Fem Interviewee 2

Interviewer [00:00:01] OK, so did you get a chance to take a look at the consent material that I sent over?

Fem Interviewee 2 [00:00:07] I did. It was back when you originally sent it, but I did look at it.

Interviewer [00:00:11] Great. So I also attached it to the calendar appointment for this. And there is a statement right at the end that I need you to read aloud.

Fem Interviewee 2 [00:00:39] Thinking about opening it.

Interviewer [00:00:42] Oh, that's fine. Take your time.

Fem Interviewee 2 [00:00:59] Why...Why isn't it opening.

Interviewer [00:01:17] Sorry, I should I sent over a warning that you needed to have it open. That's OK.

Fem Interviewee 2 [00:01:22] That's OK. It's just like not....It doesn't wanna.... Word doesn't want to open it. Like sitting here and saying it's opening and protected view. But just like, not actually opening.

Interviewer [00:01:38] OK, well, let me I can pull it up too and then just share my screen. If that's easier.

Fem Interviewee 2 [00:01:46] Yeah, that might be easier, cause this.... It's just... It's not opening.

Interviewer [00:01:53] Share your screen, this one. All right, can you see that?

Fem Interviewee 2 [00:02:02] Yes.

Interviewer [00:02:03] OK. So you said you already looked at all of this. I'm not going to go through it in detail. But here's the statement of consent. This right here.

Fem Interviewee 2 [00:02:10] Right. I have read the informed consent materials and have received answers to any questions I have asked. I consent to take part in the study.

Interviewer [00:02:21] Beautiful. Thank you. All right. So then. Now I'm going to ask you a series of questions about your work from home workspace. Please keep in mind there are no right answers to these questions. Just answer how are feeling or thinking. No right answers. So no constraints and don't feel the need to be super overly formal or anything like that. Just answer how you're feeling. All right. So first, can you please tell me about your work from home workspace? Why did you choose that location? Did you design it all to suit your needs? Did you add any features or objects to the space? So just tell me about your workspace.

Fem Interviewee 2 [00:03:01] Yeah, we... I ...we chose our workstation based off of a couple of factors. We decided to be in the living room or the dining room area because it's really the only space that we have that we could kind of sit at a table and work. So we started working on our dining room table. Mostly because we need to be out in the area where the cats are allowed because they would not let us work in a closed back room and they're not allowed in the office. And I don't have a desk in the office. And then that... The dining room table works out kind of fine for Bob (name changed). And that did not work fine for me. So I purchased a sit-stand desk because I was starting to have shoulder and wrist and all kinds of not right problems, but still kept it in the dining room, dining room. It's just like up against the dining room table. But it's just, you know, it's a nice open area. And we do we do have access to windows and light and stuff, you know, in this room surrounded by, you know, windows on all three sides. So that's nice.

Interviewer [00:04:39] OK. And do you have any sort of view out any of those windows?

Fem Interviewee 2 [00:04:48] Um not really.

Interviewer [00:04:48] Or just what is your view out of those windows? I mean, your obviously looking at something?

Fem Interviewee 2 [00:04:53] Yes, we're obviously looking at something. One of the windows has a fence really close to it. It's our side yard. So it's like eight feet away, but it's got like some vine type planting going up it.

Fem Interviewee 2 [00:05:11] And then one of the windows is out to our backyard. But that basically faces an apartment building. So it's like the backside of an apartment building. There are two redwood trees there. And then the other windows just go... look out to the street and to the house across the street.

Interviewer [00:05:32] Gotcha. OK. But you really like the daylight? You mentioned? Coming in from there...

Fem Interviewee 2 [00:05:37] Yeah. The daylight is really nice.

Interviewer [00:05:41] OK, great. And did you add any other features or objects to the space other than your sit -stand desk specifically because you're working there or just you just like your decor already?

Fem Interviewee 2 [00:05:54] Yeah. No, we just like our decor already.

Interviewer [00:05:57] OK, so what physical features of your workspace do you feel like you like the most? And why?

Fem Interviewee 2 [00:06:07] Physical features...I like my desk the most because it sit-stands and I... Makes my body happy.

Interviewer [00:06:16] Sure.

Fem Interviewee 2 [00:06:22] There's nothing else that I like or dislike.

Interviewer [00:06:27] All right. Well, I guess the next question is, is what features do you like the least. Is there anything in the space, the furstrates you? When I say physical features, it's not just like not just like an object or furniture. It's just like things in the environment, physical things.

Fem Interviewee 2 [00:06:43] Um.... I least... Dislike being near the couch, because I am tempted to sit on the couch.

Interviewer [00:07:06] Fair enough. So it's a little distracting in some way, I guess.

Fem Interviewee 2 [00:07:09] Yes.

Interviewer [00:07:10] I see. All right. Well, so then... If you're thinking sort of out of the box, if you were to add one thing to that workspace, one physical feature to your environment, what would it be and why?

Fem Interviewee 2 [00:07:35] Add....

Interviewer [00:07:50] It's OK. Take your time. No rush....

Fem Interviewee 2 [00:08:12] Could probably add... I don't... I don't look at it as much because it's kind of ...now, like, behind my screen, I used to be rotated 90 degrees. But I, I would.... Really, I would I would add landscaping to our backyard. Because, I, I see it so much more now. And so it's, you know, it's very visible and therefore kind of like sits really on my mind of things I wish we'd done and looks nice.

Interviewer [00:08:53] All right. And so can you tell me a bit more about, like, what it looks like right now? And how you wish it was different.

Fem Interviewee 2 [00:09:01] Yeah, right now it's basically just tan bark ...so like mulch on the ground and that's it. And a fence. And I wish it was more.....And hopefully it will eventually be... More like kind of concrete pavers with like, you know, small greenery planted in between them. And like a little built in bench with a planter behind it.

Interviewer [00:09:36] Oh, yeah. That'd be really nice. OK, that's a that's a really good answer. And I appreciate that you took so you took time to think about it. It's clearly very thoughtful. So is there anywhere else in your home that you sometimes work? Or outside of your home.

Fem Interviewee 2 [00:09:53] No.

Interviewer [00:09:53] No, this is...this is the space. All right. Well, that makes it easy. All right. So next, I'm going to read you a quick definition and I'm going to share my screen and show it to you so you can see it also while I read it. And then I'll ask you a question about that definition.

Interviewer [00:10:09] So. There it is... So connection to nature is defined as the extent to which a person considers themselves part of the natural environment. So with that in mind, do you feel connected to nature when you are in your work from home space? Why or why not?

Fem Interviewee 2 [00:10:38] Yes, I feel connected to nature because, you know, my view, if I was to look like directly up from my laptop screen right now, is that sort of view I described is like the wooden fence with the vines kind of climbing up it. And so I feel that I can kind of always connect to that when I need visual distraction.

Interviewer [00:11:11] I gotcha. Great. So are there any other physical features in your work from home space that you associate with that feeling of connection to nature? Other than the window.

Fem Interviewee 2 [00:11:21] No.

Interviewer [00:11:21] So it's mostly just the window and the vines?

Fem Interviewee 2 [00:11:24] Yeah.

Interviewer [00:11:24] Do you have any plants around in your workstation or in your decor? Indoor plants.

Fem Interviewee 2 [00:11:32] I used to have a little baby air plant on my computer like at the base of my computer. But the cats discovered it and like to play with it and carry it away. So I had to... I had to remove it from the situation and put it in another room that they aren't allowed in. So no. So there's no other plants or anything in our house or space.

Interviewer [00:12:04] Is that mostly because of the cats?

Fem Interviewee 2 [00:12:07] Yeah. And I...it's just not me to have indoor plants.

Interviewer [00:12:12] Gotcha. OK, great. All right. So I'm going to do the same thing again and I'm gonna share another definition on my screen and then ask you another question about that. So well-being is defined as the state in which individuals can realize their abilities, handle everyday stress, work productively and feel like they're contributing to their community. Overall sense of well-being. So with that in mind, do you feel a sense of well-being when you're in your work from home space? Why or why not?

Fem Interviewee 2 [00:12:52] Yes. I feel a state of well-being when in my workstation. And it is mostly because I'm I'm so comfortable in that space and ...and content to focus. I think the....Yeah well, I'll leave it at that. Yes.

Interviewer [00:13:25] Well, can you tell me a bit more about why you're comfortable in your space and how it helps you focus?

Fem Interviewee 2 [00:13:35] It's mostly because my ...my body is comfortable. I think what... What makes....me less productive is just all of the other distractions around, you know? There's just ...it's... you know the distractions are...are very different from, you know, workplace distractions. And it's...and it's more the ability. (Mumbles) it's ...it's more that like it feels like, work has bled into my everyday life. There's no... There's no physical boundary of coming or leaving work that.... That creates that balance and separation.

Interviewer [00:14:42] Sure. Yeah no I... I get that. But you you mentioned, you know, you said you're physically comfortable. Is that. Is that....I mean....so well-being has a lot to do with stress and things like that. And is the physical comfort enough to offset any stress that you may be feeling....and... That's what allows you to be comfortable?

Fem Interviewee 2 [00:15:06] I'd say like, you know, three quarters of the time. Yes. That's enough.

Interviewer [00:15:11] All right. Great. So are there any physical features of your work from home space that you associate with that sense of well-being?

Fem Interviewee 2 [00:15:25] My chair and my desk.

Interviewer [00:15:30] Are there any other.... Any other items around you other than the physical furniture that help you feel productive and like you're de-stressing or anything along those lines?

Fem Interviewee 2 [00:15:39] No.

Interviewer [00:15:42] All right, great. So then do you feel that exposure to nature generally affects your well-being? Why or why not?

Fem Interviewee 2 [00:16:04] Yes, I feel like it does help that. And I would almost say, you know, more because it feels easier to get up and leave the house than necessarily at work. You know, it's easier to, you know, take my lunch outside. It's right there. You know, and like sit in the backyard or go on a walk or, you know, do that. There's a... Because all of this is blended and so many less boundaries, it makes it easier to get up and leave, you know, and stop working and take a break in that way.

Interviewer [00:16:55] So you mentioned taking your lunch outside and going for a walk. Are those things that you're....you're able to do more regularly now?

Fem Interviewee 2 [00:17:02] Yeah.

Interviewer [00:17:08] And do you get much exposure to....to outdoor nature through those things or through other means on a regular basis? And how often?

Fem Interviewee 2 [00:17:20] Not, you know, not a ton in that like, you know, it's not....we're not going out on a hike, you know, right at lunch and like that, you know, involved in nature. But, you know, there are lots of trees in our neighborhood. We walk through a park and see it that way.

Interviewer [00:17:40] You do that like every day or every couple of days or...?

Fem Interviewee 2 [00:17:43] Every day.

Interviewer [00:17:44] Every day? Oh, that's great. So that's kind of a nice benefit of being able to work from home is that you can pop out like that. That's great.

Fem Interviewee 2 [00:17:53] Yeah.

Interviewer [00:17:54] OK, well, I just have one more sort of overall question and then and then we can ask other comments you might have. So aside from well being and being comfortable, do you feel that the physical environment of your work from space is meeting your needs... To be able to work productively in terms of like technology and distractions? I mean, are you able...Do you feel like your workspace is meeting your needs?

Fem Interviewee 2 [00:18:22] Yes, they do.

Interviewer [00:18:25] Great! Do you want to elaborate on that at all?

Fem Interviewee 2 [00:18:29] I don't know. No.

Interviewer [00:18:34] OK. So that's sort of....That's it from me in terms of structured questions. I just want to ask if there's any additional comments or other thoughts that you'd like to share about your work from home space or your experience of working from home.

Fem Interviewee 2 [00:18:50] Yeah. You know, I... I think it actually...or maybe it does go a little bit to the last question you asked. It's...um...So working from home to me is an... It's an interesting, like, interesting to see, like, all of the like random, you know, weird modifications that we make to our workstation as opposed to, you know, when we're in the office. It's like, you know, more final solutions or, you know, things like that....I'll... I'll give some examples cause I know that was super, like, vague, but, you know. In the office, you know, it's like we have... we have them monitor arms and, you know, and so everything's up and you can adjust. But like, well, no, here I have my you know, my monitor is sitting on my NEBE book on top of my desk, you know, to get it at the right height. And my laptop is sitting on this like cardboard thing. Actually, it came from a... A beer shipment. So it's like this like cardboard kind of crate-y thing, you know, like yay high. That's what my laptop sits on. So it's, you know, it's screne is like at a height that is similar to my monitor, you know, things like the things that would be, you know, ridiculous and look super weird, you know, in... In our office space are like, well, no, that's what I...that's what I've got on my desk here, you know.

Interviewer [00:20:28] Why do you think that is? Is it like out because it's a semi....semi-permanent solution or is it....? I mean...?

Fem Interviewee 2 [00:20:32] Yeah, I, I, I think it's because it's all in this semi-permanence of like not wanting to.... To buy things or, you know, like get more....To me its like not wanting to, like, get more stuff. So this situation that, you know, I'm hoping isn't forever. It's that like it's that balance of, OK, this is real and this is happening. And. And, you know, you need to be comfortable. You need to do this like you need to have that well being, which is, you know, why I picked up my chair from the office and why I, you know, spent a lot of money on a sit-stand desk. But like, then, you know, to buy, you know, something that I set my laptop on on top of my desk, when this, you know, this cardboard piece was working just fine. You know, why? Why do that? I get you know, if I was doing this at the office. You know, I get Melissa coming by and being like "That...No....That doesn't look nice." You know? Like..."We're going to we're we're going to need to do something else here..." But but nobody can see it. So no cares...so like..

Interviewer [00:21:55] Sure. That makes a lot of sense. That's an interesting insight. Any other thoughts or comments?

Fem Interviewee 2 [00:22:08] The other thing that I, you know, appreciate more is.... I don't see it from my desk, which makes me, you know, a little sadder....But there's like I.... I feel I get to experience

much more of my artwork that's in the house, like, that, you know, again, this, you know, I see it in the evening, you know, and all of that. But like getting to it, getting to appreciate it all day.

Interviewer [00:22:36] Can you tell me about your artwork? What is it depicting or what is it?

Fem Interviewee 2 [00:22:42] Oh, not....Sorry... not my artwork, in the sense of like making it, but the artwork that I had purchased.

Interviewer [00:22:50] No, no, I knew what you meant. No, I know that the work that you put in your home. But I'd like to hear about what it... It's showing so that I can better understand how it's related to my research.

Fem Interviewee 2 [00:23:03] Yes. Is it a culmination probably like three things. One is... They tend to be very like either animal oriented, animal and nature oriented, or travel and city oriented, or are this like larger, abstract, colorful pieces, but they're all very colorful and vibrant. And so that is nice.

Interviewer [00:23:37] Awesome. Are there any of them in particular that you find yourself when you're in your work from home station that like you look at more often because it's closer or anything like that? Or is it just sort of all of them?

Fem Interviewee 2 [00:23:52] I, I look at it.... There's one is... Just... It's like a Japanese gate. That's kind of like behind my work station. So that's the one I, you know, I look at the most during my day and mostly just because of our proximity to my workstation.

Interviewer [00:24:17] Does looking at it give you any kind of well-being or sense of well-being or provide a little break or anything like that.

Fem Interviewee 2 [00:24:29] If anything, actually...it probably provides me more of a sense of....It's not "not well being"... But like, it reminds.... It reminds me of the fact that I can't travel and that I have canceled, you know, so many travel plans and so it's actually probably more of a reminder of everything that we've lost or, you know, are missing out on... And things that I wish I could be doing. And I'm not.

Interviewer [00:25:05] Yeah, that makes a lot of sense. I do also want to ask about your cats. You've mentioned them a couple times. And I'm just wondering how much of an impact they have on your work from home space and your work from home day.

Fem Interviewee 2 [00:25:21] They are a total distraction.

Interviewer [00:25:27] Good? Bad?

Fem Interviewee 2 [00:25:27] More so to Bob (name changed) than to me. I mean, for Bob.... Bad because one of our cats actively tries to bite Bob's arm if he's not, like, actively paying attention to him. But sometimes, you know, very cute. Like, I have a stack of papers on my desk and one of the cats will...will frequently, like, sit on my stack of papers while I'm working or while I'm in a meeting or, you

know, all of that. So that is, you know, just fun and cute and a nice little....It's a nice thing. It's a good thing for me to have that cuteness.

Interviewer [00:26:17] Great. OK, well, I think that's it on the interview front. Just so you know, my plan is... I'm working on the interviews now. I'm going to be analyzing data through the rest of this semester and then writing up the paper. And I should have something to share with the firm in the early spring, hopefully, so I can report back out what I've learned. And hopefully it'll be something really interesting worth sharing. Fingers crossed. But we'll see.

Fem Interviewee 2 [00:26:42] Awesome!

Interviewer [00:26:45] Yes. I'm going to stop recording. If I can figure out...there it is.

Fem Interviewee 3

Interviewer [00:00:01] And did you have a chance to review the consent material that I attached to the invite?

Fem Interviewee 3 [00:00:06] I did. Let me pull it up because I have to remember now the words I'm supposed to say based on the bottom. Sorry.

Interviewer [00:00:11] That'd be a perfect. No, that's fine. It's totally fine. No worries. This is not a super formal interview so you don't need to stress about anything.

Fem Interviewee 3 [00:00:20] Yeah, I do have to find my mouse. I hate that when it runs away.

Interviewer [00:00:25] It's hard when you have multiple monitors for sure.

Fem Interviewee 3 [00:00:28] Yes. So, yes, I have read the informed consent materials and received... I didn't have any questions. I consent to take part in the study.

Interviewer [00:00:38] OK, perfect. Thank you so much. So now, in the interest of time, I'm going to not try to waste your time and dive right into this. So I'm going to ask you a series of questions about your work from home workspace, and there are no right answers to any of these questions. Just respond however you feel, whatever you're thinking. No right answers. So first, if you could please just tell me about your work from home space. Why did you choose that location? Did you design it in any way to suit your needs? Did you add any features or objects to the space? So if you just tell me about it.

Fem Interviewee 3 [00:01:12] Yeah, actually, I did choose the space. I actually I chose space a couple years ago to be my office. We actually changed houses. And I did make additions to it. I actually don't if you can see kind of up in the upper hand corner. I actually put a loft in upstairs so that my daughter gets upstairs. And... Some of the reasons for it is just the location within the house. In that it's not.... It's

kind of off on its own, but it's close to common space. Previously, I had used a bedroom for this, and that makes it a little tougher, actually, because you're so far away from everything else.

Interviewer [00:01:54] Oh okay.

Fem Interviewee 3 [00:01:55] My husband's always at home. There's stuff that goes on. It's just better if I'm closer to other things. Also, this one has a lot more light. If you can see in the background like three windows....

Interviewer [00:02:08] That is a big window.

Fem Interviewee 3 [00:02:08] Yeah. Three windows. And that's a big deal for me. Every... All the other ones I had, they were... They might have had big windows. But the view wasn't as pretty and it's not as close to everybody else. Like it's really close to the front door. I can see what's going on. I feel like I'm part of the sort of public world. Even though I'm in an office and I have a set of double doors close. So and yes, so there were some changes done to it. I changed from carpet to hardwood floor because it's really hard to have a roly chair on a carpet. So...pain in the neck. I mean, seriously, because... I've been through that. You know, it's like I was I was on carpet and I'm like, oh, dude, shag does not work even with... Even with a roly pad. It doesn't work. It's a pain. And so... Does that answer your question? Had put in ceiling fan, that kind of stuff.

Interviewer [00:02:58] Yeah no that's great. That's very helpful. So can you tell me more.... You mentioned the view... Can you tell me more about what you're looking at outside the window and why it matters to you?

Fem Interviewee 3 [00:03:08] It's actually a Rose Garden.

Interviewer [00:03:09] Oh, nice.

Fem Interviewee 3 [00:03:11] And so, yeah, I mean, it's like, you know, we spent a long time on the roses. It's one of our hobbies. We like that. And so it's. Yeah, I mean, I pretty much... I'd say what I see out that window is a...the wall of the adjacent house, but it's got roses and some cypress trees along it and it's kinda fun. It's kind of fun because in the wintertime, you know, I cut them back. So it's very definitely winter versus summer. So it's it's an indication of season.

Interviewer [00:03:38] Nice.

Fem Interviewee 3 [00:03:39] Which I know sounds kind of goofy, but we've lived here. I've lived in California and in Las Vegas now for like six years. And you can go to a place where there's almost no season. And for me, that's important. So, yeah.

Interviewer [00:03:52] Great. Well, that was very descriptive. It was very helpful. So what... What are the physical features of your workspace that you like the most? You think? Out of all of the things you described and so on and so forth?

Fem Interviewee 3 [00:04:04] I like the hardwood floor and definitely like the light, the quality of the light. You know, it's.. When I can... I can see what the weather is, if it's if whatever it is. Personally speaking, I had experience very young early in my career where I was working in the closet. And... Yeah. Well, they had me doing door schedules and that's the space they had. Like, I was the intern, right. And, and I didn't even know it was raining outside. There was such a huge storm, like a tornado took out the Wal-Mart. And I didn't even know it was raining. And so... And so that's been something that has been important to me ever since then. I was like, dude, I was so closed away. So definitely the windows, big deal for me. And I'd say the hardwood floor because, man, the chair thing really irritated the bananas out of me. Actually. You know what? There's another thing I didn't mention I should have, which is I have a sofa in here. And being able to go sit on the sofa and talk on the phone or talk on the phone and look out the window, you know, while I'm on conference calls, cause I'll have headphones on. I just do bluetooth. And that is, you know, that makes... It.. It's like I'm not sitting in a chair all the time. I can get up and move and, you know, put my feet up. It's actually really important at times for me to put my feet up. So there you go.

Interviewer [00:05:26] That's great. OK, great. And are there any physical features of your workspace that you like the least?

Fem Interviewee 3 [00:05:33] I like the least is that the desk that I sit at is actually... I have an angled wall that I actually sit at. My desk is just a little bit too long. So it sticks out about 10 inches farther than I really want it to.

Interviewer [00:05:46] OK.

Fem Interviewee 3 [00:05:47] I just haven't done ... And it takes doing a custom built in to make it work. So it's just like, OK, I'll just deal with it.

Interviewer [00:05:54] A future project, perhaps, but not for now.

Fem Interviewee 3 [00:05:57] Yeah. Yeah. I'll do it later. But yeah, that's the thing that irritates me the most. Yeah. That is. Hands down.

Interviewer [00:06:04] Anything... Anything else?

Fem Interviewee 3 [00:06:07] I would. I have a lot of open shelves. I'd actually rather have closed storage so I could just put things away. So I don't feel like I have so much stuff.

Interviewer [00:06:16] Yeah, I understand that. It definitely makes it feel more clean?

Fem Interviewee 3 [00:06:19] Yeah.

Interviewer [00:06:19] Yeah. I got you. OK, great. So then with those sort of issues in mind, if you could add one thing, a physical feature or an object to your workspace, what would it be and how and why?

Fem Interviewee 3 [00:06:32] It would be replacing the desk and putting it in a built in that is only about 24 inches deep with filing cabinets. And have a customer return so I can.... So it's easier to get up into the loft.

Interviewer [00:06:45] Oh, nice. And what would that what would that do for you?

Fem Interviewee 3 [00:06:49] That would give me a little bit more circulation space and I would have less of a dangerous corner over here that people can potentially walk into. I don't like those. My husband's visually impaired. So we... Pokey corners are bad things.

Interviewer [00:07:01] Yeah.

Fem Interviewee 3 [00:07:03] So that... It would just open the space up just a little bit more. And, you know, I feel like that space behind my desk is like is just wasted.

Interviewer [00:07:13] Sure. I totally get that. I get that. That's great. It's a very helpful answer. Go ahead, sorry.

Fem Interviewee 3 [00:07:22] And then the other thing is, is I took the curtains off my window. I actually would like to replace those with mecho shades. Because sometimes it gets glary. It's not that critical to me. But that'll happen at some point.

Interviewer [00:07:37] All right. Great. OK. Good to know. And is there anywhere else in your home that you sometimes work or even outside around your home?

Fem Interviewee 3 [00:07:48] Very occasionally. If really don't feel well. I'll..I'll.... or yeah sometimes. I'll take a lap desk and maybe work on the sofa or potentially go out to the dining room table. But that's very rare. This really is my predominant. Yeah. This is the... dedicated space.

Interviewer [00:08:06] Gotcha. Great. OK. So now I'm going to share my screen and there's give me a definition on the screen that I will read to you. And then I'll ask you a question based on that definition.

Fem Interviewee 3 [00:08:17] Okay. Great.

Interviewer [00:08:19] All right. So can you see my screen?

Fem Interviewee 3 [00:08:24] Yes, I can.

Interviewer [00:08:26] OK, so connection to nature is defined as the extent to which a person considers themselves part of the natural environment. So with that definition in mind, do you feel connected to nature when you are in your work from home space? Why or why not?

Fem Interviewee 3 [00:08:41] Yes. Yes, I totally do, because it is literally... I mean, it's just right there. You know, it's it's. Yeah. Because I can see it. I see the light. I can just I can just turn my head and it's right there. There's no there's. I can almost go out there. Super quick.

Interviewer [00:09:00] That's great. Well, I'm wondering, since the roses are sort of a hobby of yours, does looking at them sort of recall the experience of being out there working on them?

Fem Interviewee 3 [00:09:10] Yeah, absolutely. Well, it's also because they're constantly blooming and it's always so that they're kind of a constant project. I mean, roses actually take a lot of work because you're constantly to dead head them, fertilize them. If you water them more, they bloom more. But when they bloom more, the blooms are smaller. And so there's this whole piece. And so you kind of watch as they get their new growth and they actually get their new growth fairly quickly. I can literally see them growing.

Interviewer [00:09:37] That's amazing.

Fem Interviewee 3 [00:09:39] And so because you could say, oh, the buds are bigger and then usually within we can have two weeks in the buds open, so. And then it also tells me how hot it's been because it's been one hundred and ten degrees. The roses fade very quickly and they go into... They turn into parchment paper, basically. They turn... They get burnt. And so it's like I can tell by the condition of the flowers "Wow the weather is actually not that hot". And as it cools down, they actually get more vivid. So it's....

Interviewer [00:10:08] That's amazing. I had no idea it was so intricate, I guess.

Fem Interviewee 3 [00:10:12] Well, you know. Actually I grew up I grew up raising roses, so.

Interviewer [00:10:17] All right. So then you're kind of answered this with your referencing the window in the Rose Garden, but are there any physical features of your home work from home workspace that you associate with this feeling of connection to nature?

Fem Interviewee 3 [00:10:33] Oh, definitely the window.

Interviewer [00:10:35] Perfect.

Fem Interviewee 3 [00:10:36] Definitely the window...I'd say the window in the proximity to the door. So because our front door is right behind me as well. So, I mean, it's just it's just right there. I mean, you know, and the fact that the windows are operable and they're, you know, well, on the nicer times, I'll open them and the cat comes in and out and that kind of thing.

Interviewer [00:10:54] So. That's fun. I love kitties. OK. So I'm going to share another definition on my screen and then ask you another question based off of it.

Interviewer [00:11:09] There we go.

Interviewer [00:11:12] All right. So well-being is the state in which individuals can realize their abilities, handle everyday stress, work productively and feel like they're contributing to the community. Sort of an overall sense of well-being. So with that in mind, do you feel a sense of well-being when you're in your work from home space? Why or why not?

Fem Interviewee 3 [00:11:30] Yes, I just I feel like it is it is much more organized than it ever was before. I've actually had three different work from home spaces because I've been working from home for, like, consistency for like six years, OK? And this one is is much more tailored to what makes me comfortable. I just I it's easier to roll a chair around.

Interviewer [00:11:56] OK.

Fem Interviewee 3 [00:11:56] So I'm not jumping up. I can go and grab something. Or if the dog is being a pain, I can tell her to be quiet. She's not now. She's asleep on the sofa. But yeah, just the overall light and air, and openness of this one. Also, the wood. There's a there's like... It's a hardwood floor and it's the wood loft. I personally like the texture of wood.

Interviewer [00:12:20] Yeah, absolutely.

Fem Interviewee 3 [00:12:21] And there's, you know, versus a laminate. So I like the fact that I have wood doors behind me, which we put in. We actually replaced. They used to be painted. We replaced them with wood. And the wood desk. It just it feels somehow more like a cross between a den and a library, but, sunny? That makes me just feel a little more organized, a little more purposeful about the space like that I haven't just, like, commandeered a bedroom and stuffed a desk. Because then honestly, I kind of. I don't feel as.... In this space, I feel more professional than I do in other spaces. But, yeah, definitely it's just it's a nice... It's a nice room to be in. It's a really nice volume. It's actually a fairly good size. It's about...I'm trying to think. I think it's 12 feet wide. And like, fourteen or fifteen feet long and it's got some angles in it, and it's just got a nice volume to it. It's a very comfortable volume. It doesn't feel tight. So...

Interviewer [00:13:33] I'm so glad you have a space you enjoy so much. That's really nice.

Fem Interviewee 3 [00:13:36] Yeah. Yeah. It took a while. It took a while to get it.

Interviewer [00:13:42] Yeah. Yeah. Well I mean, you said you've been working from home for about six years. And so having the opportunity to really figure out what you need and set it up appropriately, it probably makes a big difference.

Fem Interviewee 3 [00:13:52] Yeah, it does. I mean, versus other spaces. You know, I live in Las Vegas and there's if it's OK, if I if I say this.

Interviewer [00:14:01] Sure that's fine.

Fem Interviewee 3 [00:14:01] So I've worked in other spaces that were set like a sunny bedroom, large sunny, better, no less. But in that space, I looked out the window and all I saw was cars and houses and

rocks. Very different. This one, I see the roses in the garden and that slows me down. I swear, I just lowers my blood pressure. And so it it makes a huge difference to me.

Interviewer [00:14:30] That's great. OK, so then the next question I'm going to ask, you've pretty much already answered, but I'm going to ask it just because I'm supposed to and then feel free to just add to it. Or if you feel like you've already answered, then just say, I've already covered that. And that's fine. So are there any physical features of your work from home work workspace that you associate with a sense of well-being? If yes, what are they? If no, why not? And you mentioned the window and the roses and the wood. Is there anything else you want to add?

Fem Interviewee 3 [00:14:58] Just the overall space that I've got... enough space to roll around and I can go sit on the sofa if I want to. I'm not in a closet.

Interviewer [00:15:04] Yes, sounds like that was a really a formative experience for you.

Fem Interviewee 3 [00:15:09] Yeah, it was. No, I mean, it was like all of us. I didn't even know there was a storm. I was like, I can never do that again. I was so disconnected. It was like being in a bunker. So.

Interviewer [00:15:21] I hear you. OK, I just have a couple more questions. Do you feel generally that exposure to nature affects your well-being? Why or why not?

Fem Interviewee 3 [00:15:30] Absolutely. It makes me breathe. I mean, that's... I mean, I used to go... I mean, Saturday mornings, I used to get up at like five thirty and go horseback riding because then it's... In the mountains in California. And there is something about, for me, being outside where I can't see even other houses or I'm not hearing... I'm not hearing traffic, I'm not hearing all these things. But there's something about being able to sit and sort of just breathe. And that I associate with being sort of in nature away from a lot of hard surfaces and concrete and, honestly, kind of away from people a little bit.

Interviewer [00:16:15] Oh, yes.

Fem Interviewee 3 [00:16:16] But it is I mean it and I notice it personally a lot like where I live in Las Vegas. It's... All right, this is awful. But I mean, there's part of me that really has a problem with this. But because I live on a golf course, which is a water hog and there is a big part of me that I'm like, I really. I have mixed feelings about that in the desert. But, I can feel it when I drive in. It's like I can feel my blood pressure. Just drop.

Interviewer [00:16:49] It is a beautiful landscape.

Fem Interviewee 3 [00:16:51] There's something peaceful and so soothing about looking out at just sort of the green rolling hills. And it's like we certainly have a fair amount of zeroscape that we do here. But, you know, for that for the golf course, it's like, OK. And it's it it made such so much more difference. The last house we had had a backyard full of roses, which was nice, but it wasn't... There was no green. It was all concrete with roses. And now. We have... Now we look on the golf course and

that, that view, that being able to see the green is huge. It's just night and day difference with the amount of time that we actually spend in the backyard. I mean, like wouldn't even go outside, you know, it was like, with the concrete, it was like, mmmmm (meaning no) you know, just not (mumbling) there. So, yes, there's definite, definite relationship there for me.

Interviewer [00:17:48] And you often get much exposure to outdoor nature.

Fem Interviewee 3 [00:17:53] Well, yeah. Pretty....I mean, we are out walking pretty much every day. So at least twice a day.

Interviewer [00:18:01] That's great. That's really nice.

Interviewer [00:18:03] So yeah.

Interviewer [00:18:07] Good. OK, so then just one final question. Aside from well-being, do you feel that your physical environment of your work from space is meeting your needs in terms of having access to the equipment you need and being able to work productively and that kind of thing?

Fem Interviewee 3 [00:18:25] Yeah, I mean, there are some little things that I might change, which I mentioned with the desk and I might actually get wall amounts the monitors at some point. But. My needs are met. You know, it's like, I always have wants...Yeah, no, major frustrations though.

Interviewer [00:18:41] Great. OK. So that's it for me in terms of structured questions. But if... Do you have any additional comments or things you want to add about your space or your experience?

Fem Interviewee 3 [00:18:56] With regard to biophilia, I'm just trying to think.

Interviewer [00:18:59] Or just your work from home space generally.

Fem Interviewee 3 [00:19:02] The space, you know... Having, doors that you can close are really important. I mean, for me. Although in lieu of that, if you don't have that or if you don't sound... The headphones are... The noise, canceling headphones can be absolutely wonderful. Cause there are times we have, you know, other stuff going on full house...you know, that stuff. And sometimes I do resort to headphones. And so sometimes sound can be intrusive. But....outside of that... no.

Interviewer [00:19:33] OK, great. Well, that's it. I really appreciate you taking the time. It's very helpful. I'm hoping to... Well I'm working through the interviews now and then, I'll be analyzing all the data and I should have something to start sharing with the firm in the springtime. So I'm looking forward to be able to put back out what everybody's putting into this and let you guys know what I've learned. And it should be really interesting.

Fem Interviewee 3 [00:19:57] So if you if you don't mind me asking, where are you? Where are you now?

Interviewer [00:20:02] Yeah, no, I'm in Ithaca and upstate....err... in central New York. Yeah. It's gorgeous here. So I'm going to Cornell University for the graduate school.

Fem Interviewee 3 [00:20:12] Very nice. Yes, I, I... Cornell I know, because, well, the whole bird thing. I used to be really big into birding so.

Interviewer [00:20:21] Oh yeah. Yeah. The ornithology centers is huge here.

Fem Interviewee 3 [00:20:24] Yeah. It's huge. And they've got such awesome resources. Yeah. So yeah that's the thing that we do is we watch birds too.

Interviewer [00:20:30] Yeah. But talk about beautiful nature. I mean I could not ask for a better place to be quarantine like not...quarantined...but like having got shelter in place like stay.... It's it's gorgeous here and especially the fall. It's just.

Fem Interviewee 3 [00:20:42] Oh I know. I'm, I'm originally from Virginia.

Interviewer [00:20:45] Oh yes. Okay so you understand.

Fem Interviewee 3 [00:20:48] Yeah. You...The fall.... Hands down so enjoy it.

Interviewer [00:20:51] Yeah. We're actually going to a cabin in the Adirondacks here in a couple of weeks. Just for the weekend. Just because I was like, we need to get away, but we can't go very far. So it's just like a couple hour drive and we just secluded in the forest. You know.

Fem Interviewee 3 [00:21:05] Oh, you'll love it. Hopefully it has the fireplace because you got to have fire.

Interviewer [00:21:09] Yes, it has a fireplace. It definitely has a fire place. All right. Well, thank you so much, Fem Interviewee 3. I'll let you go.

Fem Interviewee 3 [00:21:15] Alright. Take Care. Bye.

Fem Interviewee 4

Interviewer [00:00:01] All right. We are recording. So did you get a chance to review the consent material?

Fem Interviewee 4 [00:00:07] I did.

Interviewer [00:00:08] Can you read the statement at the end of the consent material?

Fem Interviewee 4 [00:00:12] Yeah. So I have read the informed consent materials and have received answers to any questions I have asked. I consent to take part in this study.

Interviewer [00:00:21] Great. Thank you so much. So then, like I said, in the interest of not wasting your time, I'm gonna go ahead and dive right in to asking you questions. So I'm going to ask you a series of questions about your work from home workspace. Please keep in mind there are no right answers to these questions. So just feel free to answer however you're thinking or feeling. There's no pressure. No right answers. Whatever it is, it is. That's fine. So first, could you please tell me about your work from home workspace? Why did you choose that location? Did you design it at all to suit your needs? Did you add any features or objects to it? Anything along those lines?

Fem Interviewee 4 [00:00:56] So the space that I'm in is one of our kind of like living spaces. And I chose it because it has a lot of natural daylight. It's just more...It has a better.... It's a better space than the other available spaces which have just a small ...one single small window.

Interviewer [00:01:16] OK.

Fem Interviewee 4 [00:01:17] So that's why I chose it. And it also was kind of an empty space. We recently moved into this house, so we haven't really put furniture in this room yet. So it was open to the taking.

Interviewer [00:01:27] That's great. And did you do anything in particular to set it up as your workspace?

Fem Interviewee 4 [00:01:35] No, I mean, besides, I mean, I did purchase a desk eventually, not right away, but I did end up pushing a desk. And so I do have a setup in here, but I didn't really do anything else to the space to, like, design it for, specifically for a work area. I did do things to the space to design it, but it was just an overall design for the house. Not necessarily for my work space.

Interviewer [00:01:58] Sure. Well can you tell me about those things anyway? Because they're sort of just relevant.

Fem Interviewee 4 [00:02:03] Yes. So some of the things that we did in the space, we've painted the walls white, whereas before they were like kind of a dark brown, beige color. And so that in general was.... Yeah....I know it's pretty bad. That in general was, you know, just something to kind of have the natural light bounce better off of the walls and just kind of illuminate the space with natural light better versus having used a lot of artificial light, which were having to do, and then replace the floors with a wood look flooring. And that just was kind of, not only an aesthetic, but yeah, I mean kind of pulling that wood feel into the space. And then we do we have a lot of like...it's kinda hard to see.... We have like a lot of plants that we've been trying to pull in and like, buy furniture, to kind of support them. And that's kind of just an overall aesthetic thing. But then it also does, you know, play into the Biophilic design concept, not only as in my workspace, but, you know, just like as an overall house comfort. Just some of the things we did.

Interviewer [00:03:07] And is that something? I mean, is biophilic design, something that you're aware of and that you're intentionally doing?

Fem Interviewee 4 [00:03:15] Yeah, I mean, I think not only for myself in my workspace with my overall at my house. Yeah, in general, in my environment, just throughout, you know, is. Yeah. Trying to increase the natural, you know, the natural light. And not only natural light coming in, but like, you know, being able to have like a nice view out your window and then, yeah, pulling in plants and just kind of more natural materials. I mean, that's I mean, in general, that's just my more aesthetic preference.

Interviewer [00:03:45] Sure. OK.

Fem Interviewee 4 [00:03:47] But I think it also does kind of like really run hand-in-hand with that concept.

Interviewer [00:03:51] Yeah, I gotcha. So you mentioned a view out the window. Do you have much of a view from your workspace?

Fem Interviewee 4 [00:03:57] From my workspace, I do. So the light's gonna change. So hopefully you'll be able to see. But we do have a pretty good view out back. I mean, not when I'm sitting here, if I'm facing a wall, but I typically do, like, turn a lot. And so it's... There's a lot of, like, greenery and trees and everything. So I have a pretty nice, what I would consider a pretty nice view.

Interviewer [00:04:18] Great.

Fem Interviewee 4 [00:04:19] Not... Accessible at least. It's not like directly what I'm staring at. But but it's accessible.

Interviewer [00:04:25] That's great. That's really nice. So what physical features of your workspace and the surrounding environment do you feel like you like the most?

Fem Interviewee 4 [00:04:39] I think I just like the openness of it. And like the central location of it. The other space options were kind of like tucked in the back of the house. And so I like kind of be up here. And I like the the view and the natural light. And, yeah, just like the.... I'm kind of like in the middle of the house, which I prefer location wise.

Interviewer [00:04:59] Gotcha. So then on the flip side of that, is there anything about your space that you dislike or what do you likedislike? What do you like the least?

Fem Interviewee 4 [00:05:09] Yeah. I dislike that I'm staring at... So when I'm looking at behind the camera here, the computer is just a blank, flat wall. So I don't have anything up yet as far as artwork. I don't have any windows along that wall. So that's, that's something I dislike. Another thing I dislike is that it is in one of the living spaces. So when I'm not working, it definitely... My work life still has a presence. And so it's a little bit harder to make that separation between, you know, the work and the play if you will. You know, like get that separation between work life and off life. Yeah. And so I had to kind of make that decision because I do spend a lot of time during my days at work. And so do I want to have that, you know, be tucked away so that I don't have to deal with it when I'm off work. Or the time that I am spending at the desk have that be enjoyable because it's out in this space? Or do I want

to have to physically move it every day? So I kind of ...it's kind of a tradeoff. I had to choose. I chose to leave it out here and enjoy my, kind of, time while I'm working and then just close the laptop when I'm not working as like a physical sign that we're not working.

Interviewer [00:06:27] That makes sense. That seems like a good compromise. So then with those sort of frustrations in mind, if you could add anything to your workspace or perhaps change anything, what would it be? And why?

Fem Interviewee 4 [00:06:41] I think it'd be nice for me to have a setup that is easier to move. Um...a more of, like, a flexibility so that I can, like, easily put it... Like tuck it away in a room or in a space. Yeah, I think that would be one thing. And then just I mean. I have... Right now it's pretty clean and there's just one little cart right now for all my finish samples, but a week ago this whole corner was like piles of samples that I just recently was able to get rid of. So that's the other thing, too, and I know it doesn't have much to do with biophilic design, but it does have to do in general with, you know, having that work life balance of like having, you know, just like work stuff. And, you know, I'm in interiors, so we have we have to have a lot of physical samples. So that's one thing that, you know, is not great. And I would have liked to have changed like either had a better system or.... Not sure actually the solution to it, but....

Interviewer [00:07:41] Like more organizational space, maybe more layout space, that kind of situation?

Fem Interviewee 4 [00:07:47] Yeah. Yeah, exactly. Or, you know, also I could have done that stuff at the office, but obviously we're not working from the office right now and we're trying to go in limited. Right. So yeah, that would have been the other option.

Interviewer [00:08:00] You mentioned the blank wall in front of you, as sort of a thing you didn't like. Is there anything you do to add to that or change that? If you had enough time? And so on?

Fem Interviewee 4 [00:08:09] Yeah. Yeah. I think I would like to do some type of like artwork, whether it's. You know, like by an artist or if it's just like prints with digital prints. I mean, I don't like blank walls, so I've been wanting to put stuff up on that wall. A little more interest.

Interviewer [00:08:26] Yeah, that'd be great. Awesome. So is there anywhere else in your home that you sometimes work... In your home or around your home?

Fem Interviewee 4 [00:08:37] Not really. Not now, at least. Before I was on a smaller table, when I was moving around a lot. So before I would...if I had to work past like five, I would move my table into like a living room area and watch TV while I work with my husband. Like he'd be watching TV... So we can kind of still be together while I'm working. And there was a couple of times that I did... When I had long things to just like read and not like really had to like do any drafting. I would go outside, out back and sit and read on just like a tablet. But that hasn't really. Yeah. It was nice, but I haven't had that opportunity lately to do anything like that. So it was very, very short, very limited amount.

Interviewer [00:09:18] OK. OK. OK. So now I'm going to share my screen and show you a definition. I'll then read you the definition and ask you a question about.

Interviewer [00:09:30] There it is. All right, can you see my screen?

Fem Interviewee 4 [00:09:36] Yes.

Interviewer [00:09:37] OK, so connection to nature is defined as the extent to which a person consider themselvesthemselves, part of the natural environment. So with that definition in mind, do you feel connected to nature when you're in your work-from-home space? Why or why not?

Fem Interviewee 4 [00:09:54] Yeah, yeah, I do. I think just because of my kind of like access to my backyard and like the visual of it? Cause you feel like I'm still, like, it's part of, like, the same space.

Interviewer [00:10:09] Gotcha. So. Are there any physical features of the work from home space that you feel like contributes to that connection to nature. Is it just the window?

Fem Interviewee 4 [00:10:23] Yeah, I mean, I think it's the window. And just like my proximity to it. Yeah. I mean, I don't...I don't know if I can think of anything else that really ties to that. Yeah.

Interviewer [00:10:34] OK, great. OK. So I'm going to share another definition. Well-Being is the state in which individuals can realize their abilities, feel like they can handle everyday stress, work productively and feel like they're contributing to the community. Sort of an overall sense of well-being. So with that in mind, do you feel a sense of well-being when you're in your work from home workspace? Why or why not?

Fem Interviewee 4 [00:11:03] Yeah, I think, I do. I think I picked this space because I had already kind of created it to be a space that I like to be in anyway. So just like the openness of it. And then yeah like, sticking plants and stuff everywhere is something I already wanted to do in the first place. So regardless of it being a work area, so I feel like it's a space I enjoy when I work in it.

Interviewer [00:11:29] OK. That makes sense. So you kind of already answered this, but I need to ask it anyway cause it's part of the little guide. Are there any physical features of your work-from-home space that contributes... That you associate with your feeling of well-being? You mentioned the plants, you mentioned the openness. Anything beyond that?

Fem Interviewee 4 [00:11:51] My dog is here. I enjoy my dog being here.

Interviewer [00:11:53] Oh, yeah?

Fem Interviewee 4 [00:11:55] Yeah he hangs out in this room because we're right by the front door and that's his...He's by the front door. So that's another feature of the space that we haven't talked about yet that does kind of have a nice connection.

Interviewer [00:12:06] Sure. No, it's I totally get that. We also have... My dog. She cheers me up all day long. It's a big deal. All right. So do you feel generally that exposure to nature affects your well-being? Why or why not?

Fem Interviewee 4 [00:12:23] Yeah, I think so, because, I mean, it's what we do, at least what I do is a lot of digital. So it's hard sometimes... You kind of get wrapped up in that world. And so, yeah, I think that my connection to nature, at least here physically, kind of is a little bit more grounding. A little bit pulls you back, you know.

Interviewer [00:12:43] Yeah. And do you get much exposure to outdoor nature on a regular basis?

Fem Interviewee 4 [00:12:49] Yeah, we... we like to do a lot of like kayaking and camping. And so when the weather permits, we do that. And then also just pretty much every other day walks with the dog. I feel like we yeah, we we get out.

Interviewer [00:13:05] So pretty much every other day?

Fem Interviewee 4 [00:13:07] Yes.

Interviewer [00:13:08] And is that.... Is that something that's different now that you're working from home versus when you're working in the office, or...?

Fem Interviewee 4 [00:13:16] Yeah, definitely. I feel like I have a lot more time. Not a lot more time, but because I'm physically here, I guess I maybe now I feel like a little bit more of a need to get it out of the house because I'm in the house for work and I'm in the house for off time. And so, you know, there's a little bit more push for me to like take a minute to get out of the house to have that wind-down time that I usually would have during a commute or something. So that's typically when we'll take the dog for a walk or something.

Interviewer [00:13:43] OK, nice. That's great. And when you're walking the dog, what kind of environment are you in?

Fem Interviewee 4 [00:13:52] Right now, it's just residential street.

Interviewer [00:13:55] So, like, in a suburb?

Fem Interviewee 4 [00:13:58] Yeah sorry it's in a suburb. Yeah. So, you know, a lot of front lawns and fences. Yeah. But before we moved here, we used to go to a park, which is nice. So I think we're looking now to find another park that we can, like, walk around. So it's a lot more kind of greenery and less like street sidewalk.

Interviewer [00:14:20] Sure. OK, great. That would be really nice. All right. I just talk one more question on my list here and then we can talk sort of generally, but aside from well-being, do you feel like your work from home space is meeting your needs in terms of being able to work productively and do your job effectively and and so on?

Fem Interviewee 4 [00:14:42] Yeah, I think so. I think the only thing that's lacking is like the ergonomics. But I mean, that's. Yeah, and that's a big issue. But it also is something that is typically an expensive thing. And so depending on how long we plan to work from home, you know, whether that investment is worth it or not.

Interviewer [00:15:06] Yes. No, I completely understand. OK, great. That, like I said, sort of is all the questions for me. Do you have any additional comments sort of generally about your work from home experience or your work from home space that you would like to share?

Fem Interviewee 4 [00:15:24] No, I think we covered most of it.

Interviewer [00:15:27] OK, great. Awesome. So two things. First, I just ordered for myself a sit stand desk convertor. It was only like a hundred and fifty or something really supposed to help with the ergonomics. And actually, I hadn't I hadn't done the whole like, you know, how the company had that stipend that you could. Apply for. I hadn't done that yet, so then they said that I could use that for the sit stand desk. So something to think about. Yeah, yeah. It was like white and it's clean and it's simple and whatever. This other thing I am working on collecting the interviews now. I'll be analyzing the data and everything over the next month or so and then I should hopefully have something to report back to the firm and share with all of you in the early spring. So keep an eye out for that.

Fem Interviewee 4 [00:16:16] Perfect, great thanks.

Interviewer [00:16:17] OK, great. Thanks, Fem Interviewee 4. Take care.

Fem Interviewee 4 [00:16:19] Yeah, you too. All right. Bye.

Interviewer [00:16:21] Bye.

Fem Interviewee 5

Interviewer [00:00:01] All right. And did you get a chance to review the content materials that I attached to the invite?

Fem Interviewee 5 [00:00:07] Yeah, I have pulled up.

Interviewer [00:00:09] OK, perfect.

Fem Interviewee 5 [00:00:11] I can read the statement.

Interviewer [00:00:13] Yep. Whenever you're ready.

Fem Interviewee 5 [00:00:16] I have read the informed consent materials and have recieved answers any questions I've asked. I conset to take part in the study.

Interviewer [00:00:23] Excellent. Thank you so much. And I really appreciate you taking the time to do this. And in the interest of not wasting your time, I'm just going to dive right in. So I'm going to ask you a series of questions about your work from home workspace. And there are no right answers to any of these questions. So just answer how you feel, whatever you're thinking. All the answers are totally appropriate. Just no right answers. All right?

Fem Interviewee 5 [00:00:47] OK.

Interviewer [00:00:48] OK, so first, can you please tell me about your work from home workspace? Why did you choose that location? Did you design it all to suit your needs? Did you add any features or objects to the space? That kind of thing.

Fem Interviewee 5 [00:01:01] So I am currently sitting at a different location than I had been for the first five months of working from home. So I have a technically a two bedroom apartment, but it's just me. So I was working in, like, what used to be my dining room. So my big table in there. That's where I had been set up. But my friends was staying with me the past couple of weeks. So actually in my living room right now. And it was kind of nice to have a change of pace. So I stayed here this week, even though my friend has left. So I had two different environments and I think that... I didn't make very many modifications to either of them. Just like trying to get my computer height at a good spot for me to actually work with my laptop and my monitor. But I do like to work in a spot that has windows. I worked out of my parents house for a week... Pretty early on. And I tried to work out of the basement for two days and I couldn't do it. And I had to switch to worked in the kitchen, which bothered my parents, but made me happier. So that is like one of the factors that I realized that I wanted working from home that I hadn't thought about.

Interviewer [00:02:23] Can you tell me what what is... What is it about the windows?

Fem Interviewee 5 [00:02:29] Just being able to see what's going on outside and even hearing it, like I have my open a little bit right now.... Probably not good for the recording, but...

Interviewer [00:02:39] Oh its fine...I can't hear it at all. No worries.

Fem Interviewee 5 [00:02:40] You feel you feel more connected to what's going on outside and not like you're in a little bubble, especially working alone. I think I realized it less in an office with other people moving around me. And just like natural light is really nice to have during the day, especially when you're staring at a screen. Um....I don't know? I....I think that it's interesting to see what's going on.... There's a family of squirrels. I'm on the fifth floor so I can see like trees and a roof of the building next door to me. So I've kind of noticed them and their, you know, habits when they run around during the day. But.... (shrugs).

Interviewer [00:03:19] Oh that's fun. Nice. Very cool. So can you tell me what physical features of your workspace or workspaces do you like the most?

Fem Interviewee 5 [00:03:35] I think probably my, my physical desk is like a nice big space to work off of. I have a really hard time working, not at a desk like my friends work off their couch and I just can't do it. I think having a real space to sit, first of all, and then. Secondly, I would say like access to natural light and windows, are, like, the two things that I really need.

Interviewer [00:04:01] Yeah, sure, that makes sense. Can you tell me... Well you already talked to sort of why about the windows, but can you tell me a bit more about why with the desk? Just the surface or....?

Fem Interviewee 5 [00:04:13] Um... Just having room. Room to spread out and a place where I can come and focus. And it's like separate from the rest of my life. If that makes sense?

Interviewer [00:04:23] Totally.

Fem Interviewee 5 [00:04:24] Like I don't sit here when I'm not working. So that, like, barrier between workplace and home space is kind of based on the desk. My... My desk does happen to be wood just because that's what I have. I don't know if that really makes a difference to me, though.

Interviewer [00:04:50] Yes. All right. So then could you tell me which physical features of your workspaces do you like the least? And why?

Fem Interviewee 5 [00:05:04] What do I like the least...? I... I guess I would say. I don't know. I don't know if I have very many complaints about my physical workspace.

Interviewer [00:05:20] Or just things that that frustrate you, or they're difficult, or that you wish you could change, or that you're planning on changing.

Fem Interviewee 5 [00:05:28] Well, during the summer, I don't have air conditioning. So it got really hot. And I do I have an overhead fan in the room I was sitting in before. But that definitely. Got pretty rough. But now that's not an issue to me, and I like being able to control having the windows open or... Like now that it's colder, I have more control over what, like, my work environment temperature wise is like which is really nice. Um where, like, in an office, you don't really get to have personal control over it.

Interviewer [00:06:01] Yeah, absolutely. Sounds like you're pretty happy with it overall?

Fem Interviewee 5 [00:06:08] Yeah, I guess....Cause I have options so I can always you know, I got bored with sitting here. I could sit in my other space. I have plenty of room to find something that would work.

Interviewer [00:06:19] That's great! Well, that's... I'm glad you're happy. So if there was one thing, one physical feature or object or like adaptation that you could add to your workspace, what would it be? And why?

Fem Interviewee 5 [00:06:37] I... I would probably add a better light in this room. It was like really rainy yesterday and so it got pretty dark. And I have like an overhead light, but it's way behind me. So I don't have anything like at this desk. So I'm trying to work when it's darker so that would be something.

Interviewer [00:06:57] Oh for task lighting?

Fem Interviewee 5 [00:06:58] Yeah. That I would add. Also, the ability to stand at my desk. I used to use that in the office and I'm really tall. I'm over six feet tall, so I can't really do like a home rig stand up desk unless I buy a new one, but yeah those are the two things I think that... Or air conditioning, but now it doesn't matter so.

Interviewer [00:07:25] (Laughing) Or air conditioning....I hear that! It gets hot in the summer for sure. So you mentioned that you work in the living room space and then your dining room space. And you have done both. Is there anywhere else in your home or immediately outside of your home that you sometimes work?

Fem Interviewee 5 [00:07:46] I will sometimes take calls on my balcony. Depending on what I'm doing. If I don't need to have my big monitor up. If it's just like more of a like discussion based call. I've been sitting outside when it's nice out.

Interviewer [00:08:03] Can you tell me a bit more about that space?

Fem Interviewee 5 [00:08:06] So it's right off my living room, to my right. And the balcony is the whole length of my living room, but it's only two or three feet deep. So I have a little table out there and a chair. So yeah I don't sit out there very often, but if we're doing like, you know, like a lunchtime call or like a staff meeting or (video call static) I'll go there.

Interviewer [00:08:36] OK. And it does it have the same kind of view as the like the squirrels and the trees that you mentioned earlier?

Fem Interviewee 5 [00:08:43] Yeah.

Interviewer [00:08:43] OK.

Fem Interviewee 5 [00:08:44] Yeah. My my apartment only faces east. All the rooms are just in a row.

Interviewer [00:08:52] That makes sense. All right. Very cool. All right. So now I'm going to share my screen. And on that screen you'll see a definition which I'll read to you, and then I'll ask you a question about the definition.

Fem Interviewee 5 [00:09:04] OK.

Interviewer [00:09:08] All right. Can you see my screen?

Fem Interviewee 5 [00:09:08] Yes.

Interviewer [00:09:11] OK, so connection to nature is defined as the extent to which a person considers themselves part of the natural environment. So with that definition in mind. Do you feel connected to nature when you are in your work from home workspace? Why or why not?

Fem Interviewee 5 [00:09:27] I....would say... Partially. Because I can see what's going on outside and I can hear it and feel it when my windows are open and I have a couple of plants in here so there's definitely some nature that I have access to in my working from home environment. I would also say, though, that I.... Get really antsy and go outside like the minute I'm done working. And I had been like, you know, eating lunch, my balcony or... So, I definitely sometimes will feel, like, I, you know, I need to get outside after sitting indoors for eight hours. So yes and no, I'm not totally isolated. But I still think that there is still like.... A mental barrier. Like I know that I'm working and I'm inside. So even though that there are natural elements in my workspace, it still feels separates me from. I don't feel, like, connected to nature. I guess when I'm working.

Fem Interviewee 5 [00:10:40] Sure. You mentioned you have a couple plants around you. Can you tell me a bit more about that?

Fem Interviewee 5 [00:10:47] Yes. So....I have this scraggly plant that I've just been letting grow since I moved here a year ago. I just haven't pruned it. So it's all over the ground now. The vines descended too far. And then I actually have, like, cuttings of a dead plant sitting next to me. Also kind of weird. But they're over there.

Interviewer [00:11:15] Oh. Like a dried...dried thing...

Fem Interviewee 5 [00:11:19] Yes. I mean. Yeah, I went to a... I went to... My mom wanted to go to a Sunflower Field, and you could like cut plants to bring home. And was like sunflowers are going to die by the time I got home, so I cut down some dried little guys... I don't know what they are.

Interviewer [00:11:33] Cool. Nice. So are there any particular physical features of your work from home space that you associate with that feeling of connection to nature? You may have already sort of covered this, but I need to ask the questions in order so...

Fem Interviewee 5 [00:11:49] Yeah. So. So I guess having having plants around, having windows where I can see...Like I live in the middle of downtown Milwaukee. But there happens to be a couple of trees right next to my window. So I consider that more of a natural element that like staring at a building. I can hear like sounds that are natural, like they're a bunch of seagulls. I live near the lake. So I can hear lake sounds occasionally. So I think all of those help with that connection to nature?

Interviewer [00:12:24] Great. That's really nice. OK, I'm going to do the same thing again. I'm going to share another definition and then ask you a question about that. Let me get the right definition. So well-being is defined as the state in which individuals can realize their abilities, handle everyday stress, feel like they're working productively, and feel like they're contributing to the community. So with that in mind, do you feel a sense of well-being when you're in your work from home workspace? Why or why not?

Fem Interviewee 5 [00:13:01] I think that on certain days, yes. I had a lot of room to work and I have access to the resources that I need. Through technology and everything. And I feel like what I'm working on is contributing to the community... But definitely being removed from my coworkers? It makes a lot harder. And so I feel like sometimes I never used to get stressed at work before working from home. But like we have a project with lots of deadlines and really coordination heavy. And that's been tough to manage that working alone and separate from my peers.

Interviewer [00:13:46] Sure, that makes sense. That makes a lot of sense. And are there any physical features of your work from home environment that you associate with that sense of well-being?

Fem Interviewee 5 [00:14:03] I think that being able to, I guess, control my space more can, like, contribute to that. So if I'm, you know, depending on the task I'm doing, or what mood I'm in, I have a little bit more space to spread around and different options than I did in the office. And the fact that I've been able to work from different physical locations. Like when I worked for my parents house, I got to see my family, which I wouldn't have been able to do if I had to work from the office. So.

Fem Interviewee 5 [00:14:34] Yeah, that's true. Nice. So it's a lot of control actually... Controlling the thermal comfort and also like where you get to work and all that sort stuff. That makes sense. So then more generally, do you feel that exposure to nature affects your well-being? Why or why not?

Fem Interviewee 5 [00:14:53] Yes. For sure. I've just always been a person who likes being outdoors. And I love the water. My family makes fun of me because I am like the only one of the kids that moved back near Lake Michigan. Just cause I felt weird living in a place where I didn't have access to that much water or like not be able to swim in the summer. So I think that I definitely look for access to nature as something that I was looking for when I moved to Milwaukee. And like having previously lived in Chicago, it's way harder to get to more remote natural areas than it is in Wisconsin, where you can drive 30 minutes. And it's like super rural and there are, you know, state forests and stuff pretty close by. So I just like, feel better when I'm outside.

Interviewer [00:15:45] Can you tell me what you mean by that?

Fem Interviewee 5 [00:15:52] I don't know what I mean. I haven't thought about it too much. Like why... Why it makes me feel that way. I just. I always have gotten super antsy when I'm inside all day long. I don't know. I like I like having views change. I can't imagine living in a place where, like, the weather is the same every day. That would drive me crazy. I don't know why, but I get to be seventy degrees everyday and I still probably hate it.

Interviewer [00:16:27] All right, great. OK. So I actually just have....Oh Uh... How often since your your you know, you're in Milwaukee right now on your in your apartment. How often are you able to get exposure to outdoor nature? And how do you do it?

Fem Interviewee 5 [00:16:44] Every day.

Interviewer [00:16:46] Every day?

Fem Interviewee 5 [00:16:48] Yeah, I am able to walk to the water from where I live. So that's like the most common exposure. Like big nature that I have. Living In the city there are like trees and city animals. But I'd say Lake Michigan and walking there is, like, my most routine exposure, exposure to nature. And then on the weekends, I like, might go on a hike or something and actually drive out of the city.

Interviewer [00:17:17] And this daily exposure to nature that you're getting through your walking, is that different now than from when you were working in the office?

Fem Interviewee 5 [00:17:28] I think that I. It's different, but I still I sought out the same thing when I was going to the office. I used to walk to work at our office and our office is along the river. So I'd walk along the river to get home. So I still have a similar... I mean, granted that was through downtown, but I had a similar practice of doing that every day. When I started working for home. The first couple of weeks, you know, was like gross and cold, but I realized that I still had to like get out and walk at the end of the workday and be outside again to kind of like reset and have similar habits to what I was doing when I was working in the office.

Interviewer [00:18:14] Great. OK, great. So then aside from well-being, do you feel that the physical environment of your work from home space is meeting your needs in terms of like technology and having access to the resource you need and being able to...? I mean, are you suffering from any frustrations?

Fem Interviewee 5 [00:18:35] I would say most of my needs are met. From a basic level. I'm sure there I think I could do that would, you know, improve my setup, but like I have access to resources, I mean, technology wise. For sure. Like, my Internet's been fine and all of the like infrastructure things in my apartment, everything works. So I definitely to feel like...

Interviewer [00:19:07] So you feel like you can do your job effectively?

Fem Interviewee 5 [00:19:08] Yes.

Interviewer [00:19:09] OK. OK, great. So that's sort of all the sort of structured questions that I have. But I just want to ask, do you have any additional comments that you want to share about your work from home space or your your experience about working from home?

Fem Interviewee 5 [00:19:25] I think that. I think that it's interesting to, like, see. I wish I could see other peoples working from home setups and like what they.... How they are. Cause I know there's some people that, like, work out of their basements and things like that where where I think that I would really struggle if I had a different working from home environments. I kind of lucked out with having an extra room in my apartment and like having good windows and things like that. So I like I like to kind of imagine what it would be like if I were in different scenarios. It definitely could be harder for me working from different locations. I mean, I know people like could work from anywhere and they're totally fine with it. I'm definitely not one of those people.

Interviewer [00:20:13] That's good to know. It's good to know. Great. Well, do you have anything else?

Fem Interviewee 5 [00:20:21] The one other thing is I definitely like having the distraction of knowing what's going on outside.

Interviewer [00:20:28] OK.

Fem Interviewee 5 [00:20:29] If that makes sense. Like I I look over to the window all the time, like I did on the call, which is why I brought it, because I noticed that I was doing it.

Interviewer [00:20:41] Nothing like an interview to you make yourself, like, introspective.

Fem Interviewee 5 [00:20:45] I know, I was like "Oh my gosh, this is recording." And I like looking out the window every five seconds. And that's something I used to do in the office too, but the window was right in front of my screen, so it wasn't quite the same. But I think that having those like little like....it's such a small break that I don't even notice that I'm doing it. But especially when you're staring at a computer having that is like nice. To kind of give you that, like, you know, ten second break from staring at your screen and like refocus on the fact there's a world outside. So that's something that's definitely become a habit. Especially working from home. I think I look out the window more than I did in the office.

Interviewer [00:21:25] Gotcha. OK, great. Perfect. So that's sort of the end of the interview. But I do want to tell you a couple things. Just as I think you might find it interesting. What you're experiencing is actually called a micro-break. There's actually been studies done about how just glancing at the window, even for 10 seconds, can actually be restorative and make you focus better on work and stuff.

Interviewer [00:21:45] So you the fact that you experience...

Fem Interviewee 5 [00:21:46] That's good, I feel better about it.

Interviewer [00:21:47] Yeah, no, it's totally a thing.

Fem Interviewee 5 [00:21:50] It's not just me being distracted.

Interviewer [00:21:51] No, no, it's it's very healthy for you. Highly recommended. The other thing is that actually you're mentioning you're looking at a bunch people's work from home spaces. And that's sort of what my research is doing, is that I collected... I got 90 responses to my survey. And people took photos of their work from home spaces. And there is a wide variety of.... I haven't really looked at the very deeply, but there's a wide variety of, like, what I would consider sort of more nature immersive versus not even slightly. And so hopefully, though, we'll learn something about how that affects people's well-being and things like that.... Through the research. So my plan is to to analyze it over the next few months and then be able to share something with you guys in the spring and get that information back out to the firm. So keep an eye out for that.

Fem Interviewee 5 [00:22:41] Cool, thank you, I'm glad I can help out. I think it's an interesting topic. So hopefully all goes well for you.

Interviewer [00:22:47] Yeah, thanks. I appreciate your time. And I'll let you go.

Fem Interviewee 5 [00:22:52] Awesome. Thank you.

Interviewer [00:22:53] Thank you. Take care.

Fem Interviewee 5 [00:22:53] Bye

Fem Interviewee 6

Interviewer [00:00:01] And did you have a chance to look at the consent materials?

Fem Interviewee 6 [00:00:05] Yes, I did.

Interviewer [00:00:06] OK.

Fem Interviewee 6 [00:00:07] Thank you for attaching them to the calendar appointment.

Interviewer [00:00:10] You're welcome. I thought that might make it easier to find. Do you have it pulled up? There's a statement at the end that I need you to read on the video, or can you pull it up?

Fem Interviewee 6 [00:00:18] OK, I can.

Interviewer [00:00:20] Great. Just the last line in the document.

Fem Interviewee 6 [00:00:29] So I have read the informed consent material and received answers to any questions that I have asked and I consent to take part in this study.

Interviewer [00:00:40] Great. Thank you so much. So now I'm going to ask you a series of questions about your work from home workspace. There are no right answers to any of these questions. So please just really feel free to answer however you feel whatever is on your mind. It's totally fine. No right answers and low pressure. So don't. No pressure. Don't worry about it. All right. So first, could you please tell me about your work from home workspace? Why did you choose that location? Did you design anything in it to make it suit your needs? Did you add any features or objects to the space? What were they?

Fem Interviewee 6 [00:01:14] So I'm using our home desk, our home office desk that was already here. We added... I added a laptop stand and separate keyboard and mouse. To make it work better with my work laptop, and be more ergonomic. Otherwise, we didn't really add anything. But I will say

that since I am one of the two people at my household working from home, I work at the desk about half the week and I work at our kitchen island about the other half of the week.

Interviewer [00:02:01] Oh, OK. Well, since you brought it up, can you tell me about the kitchen island? I mean, how is, how is that space working for you?

Fem Interviewee 6 [00:02:10] So that works fine. We actually we have... It's essentially, other than the chair, it's kind of the same set up and as far as like desk space, keyboard, mouse, laptop stand. It's. It's hotter in there. We don't have air conditioning. And a little brighter and a little noisier when the toddler is home. Yeah. Yeah. So having a room with a door that's able to close is nice for working. Both have great daylight and are pretty accessible from anywhere in the house.

Interviewer [00:02:56] So when you when you originally set up this office space, did you.... I mean, did you add anything to it to make it more than just a white room? Did you...decorate in any way?

Fem Interviewee 6 [00:03:09] (Shaking head).

Interviewer [00:03:09] Nope? Totally fine.

Fem Interviewee 6 [00:03:09] No. Not for the purposes of, kind of, working from home and spending more time in here. Although we have started to pick out paint colors.....to make it something other than white. Probably like a light bluish green.

Interviewer [00:03:29] Great. So I see that there is a window next to you.

Fem Interviewee 6 [00:03:33] Yes. There's a window on the side. And right in front of me.

Interviewer [00:03:38] Oh great! and do you... What is the view like out of those windows?

Fem Interviewee 6 [00:03:43] It's... So it's our backyard. We have a one story house. And so we have out this window...I see our... our large plum tree and back fence. And when the windows open, I get to hear the squirrel activity. We have lots of neighborhood squirrels.

Interviewer [00:04:02] Fun.

Fem Interviewee 6 [00:04:07] And then out the window facing me. I see the majority of our backyard. So patio, table, patio. Some kids play equipment, grass, a few trees and plants and pretty much you can see almost the whole backyard from that window.

Interviewer [00:04:28] OK.

Fem Interviewee 6 [00:04:29] Both... Each window is like four and a half....five...each window is five feet wide.

Interviewer [00:04:38] Oh those are big windows. That's nice. Do you have.... So when you're working from your kitchen island, do you have a similar kind of access to windows?

Fem Interviewee 6 [00:04:46] Yes. There is a large....A huge, large, huge picture window right next to the island that looks at the same view of the backyard. But you're not looking right at it. You're looking at the kitchen and the mess to your side.

Interviewer [00:05:05] OK. OK.

Fem Interviewee 6 [00:05:07] Pretty similar.

Interviewer [00:05:07] So then if I....I want to ask what what physical features of your workspace do you like the most? And why?

Fem Interviewee 6 [00:05:19] I like. That it's quiet. I like.... That... I like being able to see outside and also have really kind of quick access outside....like to pop outside for an easy lunch. When our toddler is home. I like that. It is....it can....It has the flexibility to have a closed door and be just a work area. Or this also doubles as play space. And so he can be in here while I'm working. And kind of do it that way.

Interviewer [00:06:07] Nice. And on the flip side, what physical features do you like the least about your workspace?

Fem Interviewee 6 [00:06:19] It....This kind of workspace and design and room is not like....Doesn't feel completely designed to me like....Like, finished?

Interviewer [00:06:38] Sure.

Fem Interviewee 6 [00:06:39] And I think that is a function of, you know, when I use previously when I would work from home just like one day a week, I would usually just work in the kitchen. And you don't need, like, as permanence of a setup. And and like, the work that I would be doing from home was like easy or quick laptop things and phone calls and stuff like that. Which is different when you're working from home at least five days a week. So. Yeah. So we spend a lot more time in this room that is kind of our bonus room. And now that it's actually a room and it has kind of like three uses, it, it feels a little less finished. Yes.

Interviewer [00:07:30] OK.

Fem Interviewee 6 [00:07:31] I feel like my answers are not necessarily biophilic design appropriate.

Interviewer [00:07:36] I said there were no right answers. It's important to see how would you feel. No, that's fine. It's it's also... So the research also is about like understanding what people care about, what matters to them and they're what motivates them, whether or not that is enhanced or conflicted with Biophilia. So it's it's totally fine. You don't need to worry the right answer. Yeah. I've also... Well I'll tell you that at the end. If you could add a physical feature to your workspace, what would it be? Anything. It doesn't have to be an actual object. It could be another window. It could be whatever.

Fem Interviewee 6 [00:08:15] I would add some more storage. Or like some kind of like... Or larger desk. Kind of like actual workspace. That's kind of on top of the desk that, you know, that you normally have at home. If you are not planning on working from home full time is kind of focused around life admin. You know, it's got like art projects and colored paper and bills and things like that, that are...and completely different from what you need for your work from home space. And so if it is going to be the same space....a bigger space, bigger desk space or something like that. I would love to add some color to this room. I don't have very much luck with indoor plants. They seem to either mostly get too much light or not enough light. It's tricky. So we don't....We have lots of outdoor plants, but we don't have very many indoor plants. But just... I would like to add some color to this room. Yes.

Interviewer [00:09:44] Great. Those are great answers. So you mentioned.... We already talked about the other place that you work in your house is your kitchen sometime. So similarly, in terms of what you like and what you dislike. Can you tell me a bit more about that space?

Fem Interviewee 6 [00:10:00] Yeah. It's it's warmer. And so, you know, since we don't have air conditioning. That is the warmest room in the house. And it also has huge windows. So that's an issue. It has to be kind of like packed up at the end of the day to, you know, get into dinner mode and stuff like that. So it's... It's more temporary space. And I like... I think I focus better in this office because, like we have our desk in the corner and it's at the end of the hallway and it's just it's....Even with the door open, it's more, you know, enclosed. And so that combined with the permanent space makes me prefer this as opposed to that for better focus.

Interviewer [00:10:58] Sure. That makes a lot of sense.

Fem Interviewee 6 [00:11:01] Otherwise, you know, the....Also that is at uh... Sitting at a bar stool instead of a chair. It has a back. But you know, your higher up and it's a little bit different. Ergonomic thing. But the nice thing about that is it's basically a standing height desk for me. So I can kind of go back and forth.

Interviewer [00:11:26] Oh, neat.

Fem Interviewee 6 [00:11:28] Yeah. At the kitchen island.

Interviewer [00:11:29] OK, cool. All right. So I'm going to share my screen. And there's going to be a definition, which I'll read to you. And then I ask you a question about the definition.

Fem Interviewee 6 [00:11:41] OK.

Interviewer [00:11:42] OK. Can you see my screen?

Fem Interviewee 6 [00:11:46] Yes.

Interviewer [00:11:47] OK, so connection to nature is defined as the extent to which a person considers themselves part of the natural environment. So with that in mind, do you feel connected to nature when you are in your work from home workspace? Why or why not?

Fem Interviewee 6 [00:12:04] I do. Because... Especially when the windows are open in the morning. Because I can kind of hear the wind through the trees. I can... I can hear and see the squirrels and the birds and kind of all of the way that they're interacting with nature. And then you kind of like feel a part of that. They share our backyard, so to speak. So I do.

Interviewer [00:12:43] Great. So you mentioned the windows, but are there any physical features of your work from home workspace that you associate with the sense of connection to nature? Like I said, you mentioned the windows. Is there anything else in this space?

Fem Interviewee 6 [00:12:58] No. We don't have any any indoor plants and our desk is wood, but I don't think that that gives me any kind of more sense than like a different material would be. So kind of just the...The view out the window.

Interviewer [00:13:23] OK.

Fem Interviewee 6 [00:13:24] And kind of the close proximity to be able to walk outside easily without having to go down an elevator, out the door, around the block.

Interviewer [00:13:36] It just right there.

Fem Interviewee 6 [00:13:38] Right.

Interviewer [00:13:38] Yes. OK, great. That's a great answer. I am going to do the same thing again. Share another definition, then ask another question. So well-being is the state in which individuals feel like they can realize their abilities, handle everyday stress, work productively and feel like they're contributing to the community. Sort of an overall sense of well-being. So with that definition in mind, do you feel a sense of well-being when you're in your work from home workspace? Why or why not?

Fem Interviewee 6 [00:14:16] Generally, yes. I think that the work from home workspace can't duplicate the social interaction and kind of ease of connection in a office space. And so. While I think, yes, well being and working productively and staying focused and stresses and all of that connected to the community, I think. Yes. Generally. Thumbs up for well-being in my work-from-home space, but it is a different flavor of well-being than when you have the connection to the office too. And I think that is not necessarily this workspace related, but it's hard to separate like this particular work from home space situation versus six months of... An isolated living situation or let more isolated living situation...with the pandemic. So it's hard to separate those two things well-being wise.

Interviewer [00:15:35] Yeah. No, that totally makes sense. That's totally makes sense. So. I am going to ask you to try to separate it just a little bit, just for the sake of a mental exercise. Are there any physical features of your work from home space that you feel like you associate with that sense of well-being?

Fem Interviewee 6 [00:15:58] That's a good question. I think the kind of like flexibility to to have it be whatever I want, it can be quiet. I can turn on some music. I can.... You know, that flexibility for whatever mood I'm in and whatever kind of focus I need. I think is nice. The...the kind of comfort of being at home in your own space and stuff like that, I think also goes a long way. And the, I guess, the privilege of having an actual space. I don't have to work like on my bed or my couch or something like that. We have kind of extra space.

Interviewer [00:16:48] Yeah. That's really great.

Fem Interviewee 6 [00:16:50] And also my proximity to. My coworker (referencing dog she is holding).

Interviewer [00:16:55] Yes. He's adorable. He looks like he recently got a haircut.

Fem Interviewee 6 [00:17:01] He has not, but he needs one.

Interviewer [00:17:02] He's very cute. Mine is sleeping behind me. Oh you can't see...too glary. There it goes there the camera adjust a little bit.

Fem Interviewee 6 [00:17:12] Yeah. So I think, like, wellbeing wise and kind of connection to other things also....Having having your pet with you in your workspace, I think actually makes a big difference.

Interviewer [00:17:30] I agree. Yeah, totally OK. I just have a couple more questions. So do you feel generally that exposure to nature affects your well-being? Why or why not?

Fem Interviewee 6 [00:17:44] Yes. I So I just I feel less stress relief if I'm able to like garden or even just rake the yard. I think I think it's, you know, it's hard to, I think stress relief and just kind of. Being in it in an easy space is is beneficial to well-being. So, you know, when you're outside, you kind of look for it. You tend to look further away and look at things that you're not necessarily looking at all day the rest of the day. You notice different trees or hear different birds and noises. And I think it puts your... It puts you in a different kind of mental state of the things that are actively going on in your mind.

Interviewer [00:18:43] Yeah, totally. I get that. That makes a lot of sense. So then since you feel this way, do you do you get a lot of exposure to outdoor nature?

Fem Interviewee 6 [00:18:56] Yes. So I would.... I would say that as opposed to working in an office building in the city. To my work from home environment. I get a lot more and a lot more spread out throughout the day. So I'm able to, you know, if it is a day that I'm taking a lunch break, I could take my dog for a walk during the day. I, you know, could do a tour outside in the middle of the day or in the morning instead of commuting. And even if it's a day that I don't kind of take a longer break in the middle of the day, I almost always eat outside for lunch. Just a quick pop outside. Just kind of being... Just like being in the sun. And getting that rejuvenation is very nice.

Interviewer [00:19:51] That's great. I'm so glad you have that opportunity.

Fem Interviewee 6 [00:19:54] Yeah. It's really great. And I noticeably like felt like I needed that somedays working in the office where I was like, I just need to, you know, get outside and stand in the sun and, you know, standing on a sidewalk or even a park is a little bit different than being able to, like, you know, walk around your neighborhood and just a different.... Or be in your own backyard or even or your own roof garden or whatever you have.

Interviewer [00:20:22] Yeah, totally. It's sort of a. Small silver lining to this whole mess.

Fem Interviewee 6 [00:20:28] Yes, yes, yes. There are lots of small silver lining.

Interviewer [00:20:32] Yeah, OK. So then another general question. Aside from well-being, do you feel like your your work environment, the physical environment of your work from home space is meeting your needs so that you can do your job effectively and you feel like you get stuff done, you feel like it's meeting your needs. Do you have any big frustrations?

Fem Interviewee 6 [00:20:51] So it does meet my needs.... The overwhelming majority of the time. The things...the two kind of big hurdles for where it doesn't is: video calls for my background....So I prefer not to have, you know, a virtual live like picture, virtual background. But if I am in a important client meeting, I would rather not have like a magnet table and a train table and a fort in the background. I go into my... I go into my bedroom for that call. With a nice, like bookshelf and curtain in the background and so.... So that one... Is it's kind of the working from home almost always necessitates, at least in our kind of business. Also, video chatting these days. Right? And so...or video conferencing. And so that background being less or more professional is one hurdle. And the other is printing or anything large format. So I like to work in 11 by 17 a lot. And I don't have an 11 by 17 printer. I don't really have room for an eleven... A printer that would be, you know, large enough to do that. And you know, I don't work on large drawings very often, but if I needed to, that would be, you know, I would I would do that on the kitchen table, probably, because that's the only large enough surface. So those I think those are the only two really physical hurdles.

Fem Interviewee 6 [00:22:51] If there was a way that I could work outside, that was clean and without the glare. I would love to like, set up a workspace outside, but that doesn't seem feasible.

Interviewer [00:23:04] Gotcha.

Fem Interviewee 6 [00:23:04] But I thought about it a few times.

Interviewer [00:23:06] Yeah. OK, so that's it for me in terms of structured questions. Do you have any additional thoughts or comments about your work from home space or your work experience that you feel like you'd like to share?

Fem Interviewee 6 [00:23:16] Um, no.

Interviewer [00:23:26] OK, I'm going to stop recording, then.

Fem Interviewee 7

Interviewer [00:00:01] Awesome. And did you have a chance to take a look at the consent materials?

Fem Interviewee 7 [00:00:05] I did. Yes.

Interviewer [00:00:07] OK. And are you prepared to read the statement at the end of the consent material?

Fem Interviewee 7 [00:00:10] I am, but I don't have it popped up.

Interviewer [00:00:13] That's fine just take a minute and get it up, and that's fine.

Fem Interviewee 7 [00:00:19] I filed it here.

Interviewer [00:00:22] It's also attached to the calendar invite if that's helpful.

Fem Interviewee 7 [00:00:24] It is helpful...Here we go. I got it.

Interviewer [00:00:28] Great.

Fem Interviewee 7 [00:00:32] I have read the informed consent materials and have received answers to any questions I have asked. I consent to take part in the study.

Interviewer [00:00:40] Excellent. Thank you so much. So now I'm going to ask you a series of questions about your work from home workspace. And please keep in mind there are no right answers to any of these questions. So just answer however you're thinking or feeling. Totally legitimate. No right answers. Don't worry about it. And it's no pressure. So whatever... Whatever comes to mind. So first, could you please tell me about your work from home workspace? Why did you choose that location? Did you design it all to suit your needs? Did you add any features or objects to the space, that kind of thing?

Fem Interviewee 7 [00:01:11] Sure. So my husband and I, we are pretty heavy gamers before COVID hit. So we had...we have this like eight foot long niche in our living space. And I designed a custom two person desk, maybe like two or three years ago. So we already had most of the things set up that we needed. And the only thing that I added when I started working from home is I have my personal computer behind me and my laptop to the left. And then I just bought some toggles. So I have two mouses and two keyboard so I can have them set up to one monitor.

Interviewer [00:01:46] Nice. So then when you were choosing that that niche for setting up your gaming space, was it.... Was there any reason besides it made sense spatially or was that the only reason?

Fem Interviewee 7 [00:01:57] I think that it does makes sense spatially. There's a big window right here, which I really like. I look out a lot and I enjoy having the light. It's....uh....my husband is the exact opposite, though. He does not like the light. So he will frequently... He'll like pull the curtains. And it's this lovely battle that we have going on all the time.

Interviewer [00:02:19] Very nice. Can you tell me about the view that's out your window?

Fem Interviewee 7 [00:02:23] Sure. It's a...We back up to trees. So there's this sort of like it's a wall of trees. And then we have a small little fenced in backyard. So really, what I'm just looking at is it's just a wall of trees.

Interviewer [00:02:38] That's very nice. OK, so then what? What physical features of your workspace do you like the most? And why?

Fem Interviewee 7 [00:02:48] I like how so... It's it's all one big room because it's our living, dining room slash this desk area. So I like how big it seems as opposed to if it was like upstairs in one of our bedrooms, it would be much smaller. And then it's just... Light and bright and it just feels nice.

Interviewer [00:03:07] Great. On the flip side of that, are there any physical features of....Or I guess I should say: What are the physical features of your workspace that you like the least? And why?

Fem Interviewee 7 [00:03:19] It would be nice if there was more space for laying out things. So we have.... It's a very long, skinny desk and that's just what fits in our space. So if there was more areas like off to the side here, this is just like a low wall going down to the basement. So I've sort of used that as more layout space, but it's really not...not as functional as it could be.

Interviewer [00:03:42] I got you. OK. Some more surface area would be great.

Fem Interviewee 7 [00:03:46] Yep.

Interviewer [00:03:46] All right. Well, that kind of answers the next question I'm going to ask but I am gonna ask anyway, so you can kind of expand on it or add to it if you'd like. But if you could add one physical feature or object to your workspace, what would it be and why?

Fem Interviewee 7 [00:04:02] I think you're right. It would just be it would be more surface space, like another counter extension or or something like that.

Interviewer [00:04:10] All right. Easy. Man you're blowing through these questions, it's really...making good time. All right. So next. Oh, is there anywhere else in your home that you sometimes work? Or around your home?

Fem Interviewee 7 [00:04:26] I started working at the table with the laptop and then leaving my personal computer set up at the desk. But that wasn't as comfortable sitting there all the time. So that's why I made this switch. And I really haven't gone back. So I.... I mainly just work right here.

Interviewer [00:04:43] All right. Gotcha. Perfect. So I'm going to show you a definition on my screen and then I'm going to read it to you and then I'll ask you a question about that definition. Alright?

Fem Interviewee 7 [00:04:55] Sure.

Interviewer [00:04:55] Alright. So can you see my screen?

Fem Interviewee 7 [00:05:00] Yep.

Interviewer [00:05:00] Perfect. So connection to nature is defined as the extent to which a person considers themselves part of the natural environment. With that in... Definition in mind, do you feel connected to nature when you are in your work from home workspace? Why or why not?

Fem Interviewee 7 [00:05:17] Yes, I definitely do. I'd say... Because the the light from the window and then the view outside. I definitely do feel connected to nature.

Interviewer [00:05:27] Great. That's awesome. It must be really nice to have such a good view out the window.

Interviewer [00:05:34] Cool.

Fem Interviewee 7 [00:05:35] And there my husband's opening up the window, so there ya go.

Interviewer [00:05:38] Yeah. So. Well, speaking of opening up the window, do you ever.... Do...Do you enjoy having it open while you're working?

Fem Interviewee 7 [00:05:44] Yeah, that is nice. And actually, we don't usually get to do that in the office space because we don't have operable windows. So it's nice when, especially in the fall, in the springtime to have the windows open. We have two in the kitchen and the back one and it creates a nice cross-breeze, so.

Interviewer [00:06:01] Oh, lovely. Yeah, the natural ventilation is excellent. So the answer... You may have already answered this, but if you want to add to it. Are there any physical features of your work from home space that you associate with that feeling of connection to nature? And I know you mentioned the window, but is there anything else sort of beyond that?

Fem Interviewee 7 [00:06:22] There's a lot of, like, wood tones. So our desk is it's made out of butcherblock countertop. And then we have this world map that's all made out of different kinds of wood. I'd say just, just that the materiality maybe.

Interviewer [00:06:43] Great. All right. OK. So I'm going to do the same thing again, I'm going to share my screen again and then show you a definition and then ask you a question about the definition. Here we go.

Interviewer [00:06:56] So well-being is defined as the state in which individuals feel like they can realize their abilities, handle everyday stress, work productively and feel like they're contributing to the community. Sort of an overall sense of well-being. So with that in mind, do you feel a sense of well-being when you're in your work from home workspace? Why or why not?

Fem Interviewee 7 [00:07:18] Yes, I definitely do. I enjoy... I enjoy the quiet, quite honestly. So...um.... working at it.... In the office space, I know a lot of pieces of information and I sit on the end. And so I think a lot of people will either come and chat with me just socially or also they'll seek me out for help with something. Whereas the people don't really do that when you're working from home, at least not as frequently. So I find that I'm much more productive. And I definitely like the work from home environment better.

Interviewer [00:07:51] Do you miss the social engagement, though?

Fem Interviewee 7 [00:07:55] So I still have a team of 10 people that I work with very regularly, so I still get the social engagement. It's just not on the level. I mean, that sounds horrible. Yes, I do miss my coworkers.

Interviewer [00:08:09] But it's not the same question (laughing)

Fem Interviewee 7 [00:08:13] But I still feel like I am socially engaged with the team that I'm working on, while maybe not as engaged as I was with the 80 people that were in our office before.

Interviewer [00:08:24] Oh, I understand. Yeah. And then if distraction is a big issue for you, then I totally get how the privacy maybe make you feel like, yeah, I can do my job better. So I totally get that. So aside from the privacy, are there any physical features of your work from home space or work from home environments that you feel like contribute to this sense of well-being?

Fem Interviewee 7 [00:08:46] We kind of go like a broken record, but it is nice, like being close to the window and having lots of light, is it... That's a big, big deal for me. It's the natural light. So.

Interviewer [00:08:58] Do you have any indoor plants in your space?

Fem Interviewee 7 [00:09:01] We do not, nope

Interviewer [00:09:02] OK. Good to know.

Fem Interviewee 7 [00:09:03] We're not very good with remembering to water them.

Interviewer [00:09:07] My big problem is I overwater them. I like.... They look sad. And so then I water them and then they still look sad so then I keep watering them and then I end up drowning them every time. So I'm not allowed to water them. That's exclusively my husband's job now.

Interviewer [00:09:21] Anyways. So generally, do you feel like exposure to nature affects your well-being?

Fem Interviewee 7 [00:09:31] It's interesting. So I think. Yes. But I definitely....Well, I like looking at nature and appreciating nature. I don't really particularly personally like to be in nature. I don't like bugs and things like that. So I very much enjoy looking out from a building at a lovely scene. And that's my connection to nature, not necessarily being in nature. So I'm not sure that I be... I don't think most people think that way....they enjoy actually being outside.

Interviewer [00:10:01] Well, so that starts to get at my next question is... Do you ever get much exposure to outdoor nature?

Fem Interviewee 7 [00:10:07] Sure. Yeah. Yesterday we went to a park with my dog and we walked... I don't know, about two miles in the woods. So that that that is nice. It is. It is nice to take a break and just be outside in the fresh air. So... And it's nice now that it's cooler. There aren't as many bugs. So.

Interviewer [00:10:23] Yeah. Do you do that often?

Fem Interviewee 7 [00:10:25] If there's not a lot of things going on like workwise, we probably go every Saturday. We'll do that, especially if it's... Temperature wise. So the summer we didn't really do it as much. In D.C., it's pretty hot, muggy. But in the spring, in the fall we do it probably every weekend.

Interviewer [00:10:45] And you get outside on a daily basis at all, or is it mostly just a weekly thing?

Fem Interviewee 7 [00:10:50] No...Uh, we have a dog. So I have to walk her. I walk her in the morning and my husband walks her at night. So we get...Each of us gets at least one walk a day.

Interviewer [00:10:59] Great. And is that mostly through, like a suburban neighborhood or do you get much...Do you feel like you get much exposure to nature through that?

Fem Interviewee 7 [00:11:07] We live in a...It's a townhouse complex, so they have like... They do a nice job with there are these little like niches in between the houses that are pretty, pretty well developed. So that that is nice. And then sometimes we'd like to mix it up. So we'll take her, like, we take her to the park or other places just because it's not very riveting walking the same thing every day over and over.

Interviewer [00:11:31] Yeah, cool. OK. So I just have sort of one more scripted question and then we can talk more generally. Aside from well-being, do you feel like the physical environment of your work from home space is meeting your...your other needs in terms of like allowing you to do your job? Do you have any frustrations with it or anything like that?

Fem Interviewee 7 [00:11:54] I don't really have any frustrations, no. I feel like I am pretty successful at doing my job in the environment that I have here. So and I'm very fortunate that I do have the space and we have a three bedroom townhouse and it's just two of us. So there there are plenty of spaces where even if this wasn't ideal, that we could find something else, which is nice.

Interviewer [00:12:18] Yeah, that's great. That's great. OK, so I guess said that's sort of my last question on my list. But I just want to ask generally, do you have any additional comments about your work from home space or your work from home experience that you want to share?

Fem Interviewee 7 [00:12:38] Um....No....

Interviewer [00:12:39] That's fine. That's totally fine. OK, great. Well, I appreciate you taking the time. Just so you know, I'm working on collecting this interview data right now, and I'm going to be analyzing it along with the survey data over the next few months. And then I should have something to report back to the firm in the early spring so I can share this information and hopefully we'll all learn something from it and it'll be useful.

Fem Interviewee 7 [00:13:03] Now, that sounds good. That is one thing I like working from home. I can see your cat. So you can see people who have pets.

[00:13:10] Do you have any pets?

Fem Interviewee 7 [00:13:12] I do, I have a dog. A dog. And we have two cats, too.

[00:13:15] And do they come and hang out with you much?

Fem Interviewee 7 [00:13:18] Oh Yes. They're all very social. They like to... Which I actually....There you go. That's something else. I do really enjoy that aspect of working from home. It's nice to be around them. And I'm sure that they appreciate that, too.

Interviewer [00:13:29] Oh, I'm sure. You know, we got a puppy when when the whole thing started. And she's not a puppy anymore. Well she's mentally a puppy, but physically not a puppy, which is a whole thing. But, yeah, it's definitely nice to be home and be around them. So it's good. OK, great. Well, thank you so much for your time. And I will let you go.

Fem Interviewee 7 [00:13:48] Yeah, that sounds good. Thank you.

Interviewer [00:13:50] Take care.

Fem Interviewee 7 [00:13:51] Bye.

Fem Interviewee 8

Interviewer [00:00:01] Awesome, and did you have a chance to take a look at the informed consent materials?

Fem Interviewee 8 [00:00:06] I did. So I'd say I have read the informed content material, and have received answers to questions asked and consent to take part in this study.

Interviewer [00:00:16] Beautiful. Thank you so much. All right. So I'm going to go ahead and dive right into the questions. I'm going to ask you a series of questions about your work from home

workspace. And please keep in mind there are no right answers to any of these questions. Please just answer however you're thinking or feeling. No pressure. Just however you're...What's on your mind. So first, can you please tell me about your work from home workspace? Why did you choose that location? Did you design it to suit your needs at all? Did you add anything? Along those lines.

Fem Interviewee 8 [00:00:47] Well, my computer... I... My work from home is my dining table, which is closest to to my exterior wall and and windows. I chose it because it was the largest flat surface resembling a desk because I don't have a desk or a room for one in here. I guess I could, but I wouldn't want... enjoy it. And so yeah, it just made the most sense. But also then, it was, for my job, which I've got kind of set up here for samples and light because it's the most lit space in my place.

Interviewer [00:01:33] Absolutely. That's great. So you're saying the daylight was a big factor?

Fem Interviewee 8 [00:01:41] Yes, very much. Very much so. Yeah. My apartment's a little bit dark, which is good in L.A. to not have direct sun for heat. But for light, my apartment's not been... Not great. So, yeah, I'm within a couple feet of the windows so that I can have light for working and for all the interior samples I have to deal with.

Interviewer [00:02:05] Makes sense. And did you add anything to the space to sort of make it how you wanted it for your workspace?

Fem Interviewee 8 [00:02:14] I rearranged a little bit, and because there were some shelving and stuff here that didn't make sense. Put a plant there and then put it more of a layout table so that I could be referencing things, but not have them cluttering in front of me.

Interviewer [00:02:30] Great. Great. OK. So out your window that you have there, do you have much of a view?

Fem Interviewee 8 [00:02:40] There's some of a view, I have more of a courtyard. It's happening out here, so there's a landscaped courtyard area with just a walkway that takes you to about 12 different apartments that are walkup. So it's not a long, long landscaped, you know, distant view. It's um...short.

Interviewer [00:03:02] OK, great. And what physical features of your workspace would you say that you like the most?

Fem Interviewee 8 [00:03:12] What I like the most is this view. I keep the window wide open and so I'm getting natural air. And I'm sitting like literally feet from a ton of ferns and palms. So it's like I'm sitting outside in a way. And then I brought my chair home from the office. It's a definite bonus. Yes.

Interviewer [00:03:40] And I imagine because you're in L.A., you can keep the window open most of the year. Right?

Fem Interviewee 8 [00:03:47] Yes, most of the time.

Interviewer [00:03:49] That's great.

Fem Interviewee 8 [00:03:50] Stays open unless I leave. Yup.

Interviewer [00:03:53] Yes. That's really nice. And on the flip side of that, what physical features of your workspace would you say that you like the least?

Fem Interviewee 8 [00:04:02] I don't have enough actual desk surface, and I don't like that it's my dining table cause I now no longer have a place to eat that isn't related to computers and work.

Interviewer [00:04:16] Yeah, not so great for the work life balance, huh?

Fem Interviewee 8 [00:04:19] Yeah, yeah. There's no balance.

Interviewer [00:04:23] So with that in mind, if you could add one thing to that, to your space to to make it more suitable for you, what, what would it be and why?

Fem Interviewee 8 [00:04:34] I would. Add to my space... I would actually consider just having a desk and not having the dining table and have this work a little bit better. I would add if I could, I would cut.... I would add more light. Doesn't get very far in. Yeah, I need.... And I need a.... More.... Better should setup for the actual computer and economics of that, because it's....The keyboard and everything's is at like dining height and everything and anyways. It's just not it's not working with my.... Yeah, with my eyes and with small screen. Large screen. Anyway, the computer situation is not ideal at the moment.

Interviewer [00:05:25] OK, great. That's good to know. Is there anywhere else in your home or around your home that you sometimes work?

Fem Interviewee 8 [00:05:36] I occasionally go to sit on my couch. I do that to focus and only have one screen because two I find it, when people are pinging me, it's distracting. So I do that and I do sit on my front steps once in a while, but not often because the zooms don't seem to go well out there.

Interviewer [00:06:03] And your front step, is outdoors and everything?

Fem Interviewee 8 [00:06:06] Yup. Facing that courtyard and stuff. Once in a while I do that.

Interviewer [00:06:13] OK. That's really nice. That's probably something you can really do working from the office?

Fem Interviewee 8 [00:06:21] Well, yes and no, actually. In the L.A. office we have four different outdoor work areas that you could work from.

Interviewer [00:06:29] Oh. Wow.

Fem Interviewee 8 [00:06:30] There's patio areas where people eat. And there's lots of situations where you could just go with your laptop and on lounge chairs and stuff. So we actually do have that. And I used to do that there.

Interviewer [00:06:42] OK, good to know. OK. So now I'm going to share a definition on my screen and then read it to you and ask a question.

Interviewer [00:06:51] Uh...All right. Can you see my screen?

Fem Interviewee 8 [00:06:58] Yes.

Interviewer [00:06:59] So connection to nature is defined as the extent to which a person considers themselves to be a part of the natural environment. So with that definition of mind, do you feel connected to nature when you're in your work from home workspace? Why or why not?

Fem Interviewee 8 [00:07:15] I do feel connected to nature. Just... It's just the proximity and the breeze and seeing the birds and things.

Interviewer [00:07:30] So I need to ask... You kind of answered this, but I need to ask this because it's part of my sheet. Are there any physical features of your work-from-home space that you associate in particular with that feeling of a sense of connection to nature? And it sounds like mostly the window and the situation right next to you?

Fem Interviewee 8 [00:07:47] It's the window and the proximity to to the leaves.... Are literally right there pressing against it. So, yeah.

Interviewer [00:07:56] That's nice. OK, I'm going to do the same thing again. But share a different definition. And again, read it and then ask a question. Here we go.

Interviewer [00:08:10] So well-being is the state in which individuals feel like they can realize their abilities, handle everyday stress, feel like they're working productively, and contribute to the community. Sort of an overall sense of well-being. So with that definition of mind, do you feel a sense of well-being when you're in your work from home workspace? Why or why not?

Fem Interviewee 8 [00:08:35] Some way, yes. I feel a better sense of balance. Working from home. Contributing to the community is part of that definition I'm going to struggle with. Because I'm definitely handling stress better. I'm able to walk away, go for a walk easier, do my work. But the contributing and the mentoring aspect of that has been a bit of a struggle through the little zoom boxes.

Interviewer [00:09:07] Can you tell me a bit more about that?

Fem Interviewee 8 [00:09:11] Well, I just I feel like you miss a lot, especially the more more people there are in a zoom in, and the boxes get smaller and... You can't really see people's expressions and you don't react to it... And your constantly scanning around, trying to, you know, especially when I'm talking to clients or doing interviews. I'm like, how are they reacting? It's very weird way to look and

feel connected. It's not... I don't, You know, I don't scan people's faces like this in real life. It's just you can kind of sense or see visual cues easier when someone is lifesize and when they're a little square, I'm finding that connection to be a struggle.

Interviewer [00:10:01] So it's really the social connection and the ability to read people that you feel like you're missing?

Fem Interviewee 8 [00:10:07] Yes.

Interviewer [00:10:08] OK, so then. But you did say that you feel like you're less stressed, you're able to get out more. Are there any physical features of your work-from-home space that you associate with those benefits, those well-being benefits?

Fem Interviewee 8 [00:10:23] Well, so... What that relates to is that people can't see me unless I'm on a screen, so I'm not being interrupted. People aren't just stopping at my desk. You know, people are not just grabbing at me that I can just... I can choose what my presence is online. And when I need to be heads down, I can block out my calendar and do that. And so I can cut out those distractions because people aren't there. So it's like the plus and minus to it. I can focus because they're not here. But I can't connect with you. Cause you're not here. It's like... Can't have it both apparently, but....

Interviewer [00:11:05] Yeah, it's kind of a catch 22. Yes. And you mentioned you get out a bit more. Do you go outside more frequently when you're in your work from home space?

Fem Interviewee 8 [00:11:20] Yes, a lot more. Because if I don't have to commute in L.A., which takes a million years to get anywhere. And now it's really quick. But here I can go for a walk at lunch or I can. In the time that I'm in the car. Normally, is now when I'm doing Yoga or going into the canyon, going...(losing audio, Fem Interviewee 8's microphone is dying)

Interviewer [00:11:54] Oh yeah, I lost, lost the audio a little bit.

Fem Interviewee 8 [00:11:56] OK. There. You can hear me?

Interviewer [00:11:59] Yeah, that's better.

Fem Interviewee 8 [00:12:01] OK.

Interviewer [00:12:02] I lost you around, "Into the canyon"...I think

Fem Interviewee 8 [00:12:06] Oh, just, like, yeah. I live a block from the canyon and I can go. Just head in there when I'd normally be in the car.

Interviewer [00:12:16] Nice.

Fem Interviewee 8 [00:12:16] Now, I can do that before or after work. So that's a huge, huge bonus to getting outside more.

Interviewer [00:12:26] Great. Do you feel generally that exposure to nature affects your well-being?

Fem Interviewee 8 [00:12:34] Yes, definitely. Definitely.

Interviewer [00:12:37] Can you tell me why? Why do you feel that way?

Fem Interviewee 8 [00:12:42] Sure. I mean, I actively sought this apartment for its proximity to nature. I moved here from Vancouver. I lived on the side of a mountain. I knew very much that I needed to have that when working in the city, but having the access to nature. And when I moved here, I...The realtor, was showing me different apartments. I was like, no closer. There's not enough parks here. You need to get me closer to the hill or something because I will lose my mind. I'm used to living on the side of a mountain and walking in and hiking. So I knew I needed that. And so I was very mindful of that before I got here. So...

Interviewer [00:13:21] Yeah. OK, great. It sounds like you're taking pretty good advantage of it now that you're working from home, which is really nice.

Fem Interviewee 8 [00:13:33] I'm soaking everything up I can about this because it will won't be forever.

Interviewer [00:13:39] Yeah. OK, so I only have one more sort of structured question and then we can discuss things more generally. Aside from well-being, do you feel like the physical environment of your work from home space is meeting your needs in terms of being able to do your job and work productively and things like that?

Fem Interviewee 8 [00:13:58] Yeah, that that part is not so much... I think it's also because I'm an interior designer and I just know how things should be and what furniture I could have or want. And given that my job is interiors and having to review samples and getting all that in.... There's no apartment big enough for the amount of stuff that shows up at my door. So in those ways, for my job, it doesn't work. When I'm computer, computer focused, it works pretty well. But to lay things out, to look at a space, to have the light, to have the layout space, it doesn't work for my particular job function in those ways.

Interviewer [00:14:45] No, I totally get that. Yeah, that makes a lot of sense. OK, well great. That's it for me in terms of like really structured questions. I just want to ask generally, do you have any additional comments that you want to make about your work from home space or about your experience working from home?

Fem Interviewee 8 [00:15:09] No, I mean... You know, all in all, I think it's been a positive. It's really helped to... make me realize what's important and and having more balance has been definitely... As painful and awful as this has all been, it's also been an eye opener to what I was missing. So, yes.

Interviewer [00:15:35] And one more question. Do you have any pets?

Fem Interviewee 8 [00:15:39] I do not.

Interviewer [00:15:40] OK.

Fem Interviewee 8 [00:15:41] And I did not. And I am strongly considering. I did not because of the drive and not being home enough. And I've been looking at shelters. Cause I'm like, well I'm here. It felt unfair to a dog to do that. But now I'm like, well, I'm here I might as well.... I've had a dog in the past. So yeah, I'd love to. But yeah we'll see.

Interviewer [00:16:05] I was just curious. Some people bring up their pets during the interview and some people don't. And but they have them anyway. So I just like to check and see whether or not they have them, because I think it relates to the whole wellbeing thing. So...just curious, but it sounds like you got a great situation. So if there's no other thoughts from you, that's sort of it for me.

Fem Interviewee 8 [00:16:26] Okay great. Well Thank you.

Interviewer [00:16:27] Yeah. Yeah. And so just so you know, I'm finishing collecting interviews this week and then I'll be analyzing the data over the next month or two. And then hopefully I'll have something to share with the firm and report back out in the in the early spring so that hopefully we can learn something from this and it'll be helpful.

Fem Interviewee 8 [00:16:46] Awesome. I'm looking forward to it as an interior designer. We talk about biophilic design a lot, but it's like, OK, but how do.... What I'm coming up against, you know, a lot of things. What are the metrics like? Let's prove it. You know, like....there's that part.

Interviewer [00:17:00] Yeah. And that's what a lot of... There's a lot of research working on proving it to some degree. It's definitely really hard to measure because it's very varied and, like, and people's response to it are very varied. But there is some progress. I just watched a CEU about fractals and I think it was with carpet, one of the carpet companies. I don't remember if it was Mohawk...or I feel like it was Mohawk. But they were talking about fractal patterns in their carpet and having measured productivity responses from it. So that was pretty interesting.

Fem Interviewee 8 [00:17:35] Oh, wow that's cool.

Interviewer [00:17:36] Yes. All right. Great.

Fem Interviewee 8 [00:17:38] I'm gonna go Google that.

Interviewer [00:17:39] Well, thank you so much. Yes. Actually, let me see if I can send you the guy's name that did the study.

Fem Interviewee 8 [00:17:45] OK, thanks.

Interviewer [00:17:46] Great. And thank you so much for your time.

Fem Interviewee 8 [00:17:50] Have Good day.

Interviewer [00:17:50] Take care.

Fem Interviewee 8 [00:17:51] Bye.

Interviewer [00:17:51] Bye.

Male Interviewee 1

Interviewer [00:00:04] All right. So did you get a chance to take a look at the consent form that I sent over?

Male Interviewee 1 [00:00:10] I did.

Interviewer [00:00:11] OK. And would you mind reading the consent statement aloud?

Male Interviewee 1 [00:00:16] As soon as I pull it up. Yes.

Interviewer [00:00:17] Yeah, that's totally fine. Take your time. I don't want to waste your time. So I wanted to just jump right into this and get it going. And maybe then you have more of a break.

Interviewer [00:00:31] It's right at the bottom, I believe.

Male Interviewee 1 [00:00:37] There we go. At the bottom of the thing, right?

Interviewer [00:00:41] Yes.

Male Interviewee 1 [00:00:43] I have read the informed consent materials and have reviewed answers, sorry, received answers to any questions I have asked. I consent to take part in the study.

Interviewer [00:00:54] Thank you so much. I really appreciate it. And thank you so much for taking the time. It's really helpful to have some deeper insights to go along with the survey. It really be informative for my thesis. So now I'm going to ask you a series of questions about your work from home space. There are no right answers to any of these questions. Please feel free to just respond however, your feeling or thinking. No right answers. So let's start with. Can you please tell me about your work from home space? Why did you choose that location? Did you design it at all to be how you wanted it to be? Did you add anything? Along those lines?

Male Interviewee 1 [00:01:31] Well, this wasn't my original work from home space. I used to be huddled in the corner of our master bedroom. Which.... And the reason I chose to come out here more into the into the main open space of the house is I didn't like the idea of getting up every morning and having the computer right there in front me. So get like wake up. There's work. You know, it's nice to

be able to kind of leave that space. Um.. It...It's a little more disruptive here, but it's more pleasant here. This is the space of the house that we've renovated within the last 10 years. And it's just an nicer space. The only unfortunate...

Interviewer [00:02:13] Sorry for interrupting, but can you tell me what makes it a nicer space?

Male Interviewee 1 [00:02:18] Well, there you see behind me, it's got the color... We got colorful space. The light is a little bit better in here. I have it with, like, nice lighting and our ceiling. I can dim it. And all of that kind of stuff. So it's just it's a more pleasant space to work in, even though there are people that often walk right behind me or talk over there or in there. So I have noise canceling headphones I put on most of the time.

Interviewer [00:02:44] Oh yeah that's helpful.

Male Interviewee 1 [00:02:45] That, that helps drown all that out. So that part of it is good. It's also... We already had a desk here setup for a different purpose. So all we did was just kind of move this things out of the way and set the computer here. So it is easier to set it up this way. So that's another reason I picked this location is thought "this is better." So the other... I also have another space that I like to work in, and that's out in our backyard.

Interviewer [00:03:17] Oh great.

Male Interviewee 1 [00:03:19] I haven't been able to do that as much the last couple of weeks from the standpoint of being a lot busier and having... Needing two screens a lot. And also because until until like late last week, the air quality has been pretty bad around here from all the fires.

Interviewer [00:03:34] Yes, I've heard about that.

Male Interviewee 1 [00:03:35] So I wasn't able to be outside as much over the last month as I had been. I usually start my day out there with my early morning meetings and then coming here when it's too warm out there. I'll come in here, it's cooler. And so I've been trying to mix it up that way to stay happier about working from home in the isolation that we're in. So.

Interviewer [00:04:00] Great. Well, so in the indoor space that you're working in, do you have any windows that you can look out to the outdoors or anything along those lines?

Male Interviewee 1 [00:04:09] Not really. It's... This is part of this is the middle, central room of our house. It's the living room. It's kind of the big open space between our kitchen, dining and living room. So I'm facing a wall that doesn't have a window. I can see windows off to my left if I turn that way through our family room and I can see windows off here to the right through the kitchen. But that's, that's it. I don't have any other natural light than that. I didn't really have a lot of it in our master bedroom either. We had windows in there, but there...but where I had the desk, it was kind of off in the corner, away from the windows. There wasn't a way to set it up the other way.

Interviewer [00:04:45] Sure. And do you happen to remember when you took the survey. Were you seated in this space or were you in your master bedroom?

Male Interviewee 1 [00:04:51] Yes.

Interviewer [00:04:52] You were here?

Male Interviewee 1 [00:04:52] I was here. I had already moved out here at that point.

Interviewer [00:04:56] OK. Well, that will align very nicely. So then are there any physical features of your indoor workspace that you like a lot? I mean, not just that, just like your chair or your desk, although that's important, but, you know, any decorative objects or plants or windows.

Male Interviewee 1 [00:05:12] I mean, there's there's pictures on the wall above me. To my left here there's a, there's like a a curio or china cabinet that has a lot of mementos in it from our from our life and some pictures of people. So there's, there's that that's nice. You know, off to my right. There's a very rarely used piano and some other knickknacks and things on that that are kind of fun to be able to have kind of part of it. The... I mean, the physical space of the desk itself is is good. I... You know, I took advantage of the of the company's offer to... For technology, get a second monitor. So I got that. I have a good sized monitor, which which is my primary screen. My laptop that I'm talking to you on, I actually had.... I... At one of the lunch and learns back in December before they had... The vendor had had like these these raffles for, you know, swag. And one of the things I got was this nice bent plywood laptop stand.

Interviewer [00:06:20] Oh, nice.

Male Interviewee 1 [00:06:22] And I'm like, well, maybe somebody at the house can use it. Nobody was really using it. Like, this is perfect. They got it right to the same height. So it will sit up. And so it's actually worked really well that way. So, I mean, all of that is good. You know, the desk is a nice... It's a good sized desk. So.

Interviewer [00:06:41] That's great.

Male Interviewee 1 [00:06:42] I already had a really good comfortable chair at home, and I'm able to (mumbling)...I had....I have one of the original Aeron chairs from back in the mid 90s.

Interviewer [00:06:52] Nice! No, that's great. Those are super ergonomic.

Male Interviewee 1 [00:06:55] Yeah. Yeah. And we've had we've had it for a long time. And so I just. That's what I'm using.

Interviewer [00:07:01] Great. So then on the flip side, are there any physical features of your workspace that you really dislike?

Male Interviewee 1 [00:07:08] It would be great to have a, you know, a window to look out, you know, and get in...Be able to look far away every once in a while. So. But, you know, I do offset that by being able to go outside when the weather is nice. It would be great if I had this kind of space in a room that I could close the door and work. It would be better for me would be better for everybody else. But we just we don't have that. We do have a spare bedroom office. But my wife goes in there and works, too, or or my or my kids would go in there and work. And so it. There wasn't room to set up a second computer in there, so that's why I'm not in there. So that... Those are the things, you know, if I had more of.... If I had more daylight and view, that would be great. And then if it was a room that I could separate off for quiet, that would be great, too.

Interviewer [00:08:06] Absolutely. How old are your kids?

Male Interviewee 1 [00:08:10] My younger one is a senior in high school, so she's remote learning, of course, but she's. She stays in her room and does her thing. She's... The district.... The district actually distributed Chromebook to all the students from sixth grade up years ago. So she's had it since she was a freshman. So all of her classes are on that. She also has a computer set up in her room, her with a separate monitor as well. Separate from that district computer. So she's good there. And then my....

Interviewer [00:08:42] So she's fairly independent point being?

Male Interviewee 1 [00:08:44] Yeah. Yeah. She's she's got she's got her six classes. She goes in there and, you know, we don't we rarely see her until her classes are over about one thirty, two o'clock. My older daughter is a senior at San Jose State. She's wrapping up her final semester of college right now. Also, remote learning. So she'll graduate in December. So while there is one thing about the home work space, this challenging is the technology of it is the bandwidth is the problem.

Interviewer [00:09:18] Oh, yes. For sure. Yeah. That's a lot of video streaming all at once.

Male Interviewee 1 [00:09:24] And when there's four of us doing, doing video conferences like this at the same time, and that happens every day, it's challenging. So.

Interviewer [00:09:34] All right. So you mentioned that... My next question you kind of already answered is, is there anywhere else in your home that you sometimes work? And you mentioned the backyard space. Can you tell me a bit more about that?

Male Interviewee 1 [00:09:49] Yeah, I mean, we have. We like gardening and things like that, so we have a little space...we have a large garden we transform during this whole shelter in place thing. Used to be lawn area, we converted it to more garden space, planted vegetables and all that. So that's like right in the middle of the yard. We have a.... So I can sit at a table with that behind me. And then over in the corner of the yard, we have kind of a pergola with with a vine growing on it. And it's it's more shaded over there. So what, you know, hotter times of day, I can actually sometimes go over there and still be outside in the cool. And I'm surrounded by greenery. What I like about working outside most is.... It's not just biophilia, you know. You know, a representation of it. It's that you smell the air, you feel it. I hear and I hear the birds. We...uh... We also have a water fountain out there that it's always going. And so having that water element. So just hearing the breeze and all that, feeling it, if I've got my

headphones in the blackout sound, I can at least still feel it and smell it. And, you know, that whole aspect of it has been great. Obviously, heading into the fall, we've....I'll probably be out there a lot less. But, yeah, anyway.

Interviewer [00:11:13] Yeah, great. So. If you could add one physical feature or object to your workspace, what would it be? You mentioned the window. Is there anything besides that?

Male Interviewee 1 [00:11:30] To my... To my physical desk space...?

Interviewer [00:11:33] Just your workspace, what's around you.

Male Interviewee 1 [00:11:34] Just the workspace around me...? Apart from maybe a window or a way to close it off? No, not really.

Interviewer [00:11:48] I need to ask all the questions. It's sort of difficult because sometimes you sort of answer them in other questions and then but I still need to cover them all. OK. So I'm going to share my screen real quick. It's going to come up with a definition, and then I'm going to ask you a question. I'm going to read it to you and then ask you a question about the definition. Here it is. So connection to nature is defined as the extent to which a person considers themselves part of the natural environment. So with that in mind, do you feel connected to nature when you're in your indoor work from home space? Why or why not?

Male Interviewee 1 [00:12:26] I generally do. Maybe not as much as when I'm outside, but generally I do. We have a lot of color in our space. My wife really likes, you know. Floral and leaf type patterns. And... Fall colors and things like that. So we have a lot of that going on. So that's how I can maintain that connection. We don't... We're not really houseplant people. So we don't really have a lot of them in the house. But we do have a lot around our house and we just go outside for all of that. So, you know, opening windows and being able to do that kind of thing and just have this sound and smell in the air coming in. That helps, too. So that's how I stay connected. The windows are open over there and the doors are open over here. So. And, well, one thing I guess I didn't mention about my workspace. The desk that I happen to be sitting out here is the desk.... It was it was one of my wife's places to work on photographs. And it's a glass desktop that has basically a stylized floral pattern in it, even though it's just black and glass. But I can see that. So there's a little biophilia about that that we have here already.

Interviewer [00:13:49] Great. Great. OK. Well, you sort of answered my next question already. It was. Are there any physical features of your work from home space that you associate with that feeling? You mentioned the table, opening the windows. Is there anything else you want to add?

Male Interviewee 1 [00:14:06] And just the colors of we've selected for our, for our decor. I... We have a wood floor. You know, there's things like this that are just kind of... It's just kind of part of part of who we are to have our space that way. And, you know, the light, the lighting that we selected for when we did the renovation. It's it's all super energy efficient LED lighting. But it's also the right color temperature. Right? So it's a twenty seven hundred Kelvin. So it's a little softer. And so there's that... That... Soothing aspect of it like that.

Interviewer [00:14:37] So it generally sounds like you very intentionally designed much of your space to bring a lot of those natural elements into it and sort of remind you of the outdoors?

Male Interviewee 1 [00:14:45] Yeah. Yes. For sure. For sure.

Interviewer [00:14:49] That's great. OK. So then I'm going to do share my screen again with another definition and then ask you another question. So well-being is the state in which individuals can realize their abilities, handle everyday stress, work productively and contribute to the community. So with that in mind, do you feel a sense of well-being when you're in your work from home, indoor work from home workspace?

Male Interviewee 1 [00:15:17] Probably not as much. I think the main thing here is.... Because we HAVE to work from home. Right? We're... We're isolated. It's not, it's not a choice or a convenience. It's mandated. So that. It... That makes it. I can be productive. Don't get me wrong. I can work productively. That's not an issue. But it is more stressful. I do try to to mitigate that to some degree by going on walks, usually at night. But it. Yeah, it's not it's not as good as being in a shared work environment and office where you can collaborate with people and... Bump into somebody and say hi and, you know, that kind of thing.

Interviewer [00:16:14] So I have two follow up questions. Do you miss that social engagement then?

Male Interviewee 1 [00:16:20] Yeah, I mean, we we do have it via Zoom to some degree, but it's not the same as being in the same room. I, I, I've had to go to a couple of job site visits over the last few months. They're starting to increase in frequency. And I do find that those, even though it's still you try to stay socially distant, you've got your mask on, you're you're being really, really careful. Yeah. It's still a nice opportunity to try to connect with somebody that you haven't seen in a while. That's been good.

Interviewer [00:16:54] Great. So my other follow up question is, you were talking about your indoor space before. How do you feel that that compares when you're wellbeing from when you're working in the outdoor space?

Male Interviewee 1 [00:17:04] I definitely feel better when I'm able to work out there. It it's it is more relaxing to be able to work outside.

Interviewer [00:17:16] Great. I'm so glad you have that opportunity. I live in a tiny apartment building and we have no outdoor space.

Male Interviewee 1 [00:17:21] I know I'm really fortunate in that regard. So that was like it was like a hidden benefit to this thing. But it almost feels like I'm the... I used to travel a lot for a project in Oregon that finished up in... In December. And so I'd be gone, you know, several days to a week at a time and have to work remotely and all of that anyway. Right. And a lot of time in isolation, on zooms and things, things. So that part of it was pretty similar. But now it's just like... It's all the time. So I kind of feel like I'm on this really long business trip. You know?

Interviewer [00:18:00] Just a six-month long business trip. It's fine. (laughing)

Male Interviewee 1 [00:18:02] Yeah. And my family came along, you know.

Interviewer [00:18:06] Right. OK. So I just have a few more questions. In terms of as well as any kind of well-being that you fill in your indoor space. Are there any physical features of your indoor workspace that you might associate with any kind of well-being?

Male Interviewee 1 [00:18:23] One more time. So that...

Interviewer [00:18:25] Sure. In your indoor workspace. Are there any physical features that you might associate with well-being, even if it's a small amount that you do feel? Is there any physical features you associate with that?

Male Interviewee 1 [00:18:37] Yeah, I mean, the colors and just the space that that we have here. They're... They, you know, I like them. They're comfortable for us. And so, I mean, being in that comfortable space is good.

Interviewer [00:18:52] OK, great. So you mentioned a couple times, you know, you work outside and that's that's obviously a huge thing. Do you feel generally that exposure to nature affects your well-being?

Male Interviewee 1 [00:19:07] Yes. Yeah, it's definitely more relaxing to be outside. Even if I'm in a stressful call, it's easier and more relaxing to be out there.

Interviewer [00:19:17] OK, great. And how often do you get.... Aside from being able to work outside, how often do you.... Are you able to sort of get out into nature? And what are you doing when you do that?

Male Interviewee 1 [00:19:32] Well, I mean, since, since we started this last March, I have been walking more. I do try to get out more. It's usually at night, because I usually try to do that to kind of.... It's something I started doing when I was on the trips. I was... I'd be in meetings all day long. I mean, the unfamiliar place. And it's just a hotel room. So I just go out and walk. No matter what time, you know, even if I'm getting less sleep. It made me feel better. The exercise and all of that. I've been doing that a lot more and I still do it. I tend to do it at night. There's fewer people around. It's quieter. That's that's what I tend to like to do it. I'd love to get more daylight hours, but lately that's been difficult.

Interviewer [00:20:16] Well, and what's been making it difficult? Just the amount of meetings or...?

Male Interviewee 1 [00:20:20] Yeah, I just took over a really big project from another project manager whose last day is today. And so. I yeah. This week alone, I've been I've been in meetings pretty much from seven forty five in the morning to 6:00 at night. Often straight with no breaks.

Interviewer [00:20:38] Talk about Zoom fatigue.

Male Interviewee 1 [00:20:40] It's been rough this week. It shouldn't be that bad going forward.

Interviewer [00:20:45] OK, well, I hope it improves. So aside from well-being, well-being and sort of psychological aspects aside, do you feel that the physical environment of your indoor work from home space is meeting your needs to be able to do your job?

Male Interviewee 1 [00:21:02] Yeah, yeah, it meets my needs.

Interviewer [00:21:05] OK. So that was... That's it. In terms of sort of structure and questions for me. Do you have any additional comments or other thoughts you'd like to share? Things that you didn't feel like that we covered that you feel are important?

Male Interviewee 1 [00:21:20] No, I don't think so. We covered pretty much all of it.

Interviewer [00:21:25] OK, great. That's excellent. I really appreciate you taking the time. You get 10 minutes back to hopefully go relax for a little bit.

Male Interviewee 1 [00:21:34] It's lunchtime!

Interviewer [00:21:36] Absolutely. So thanks again. And I expect to have something worth sharing with the firm in the spring. In the early spring. So keep an eye out for that and hopefully it'll be informative to you all. All right, take care!

Male Interviewee 1 [00:21:50] Thanks!

Interviewer [00:21:51] Bye

Male Interviewee 2

Interviewer [00:00:02] OK, great.

[00:00:03] So did you get a chance to review the consent materials? I sent over.

Male Interviewee 2 [00:00:05] I did.

Interviewer [00:00:08] Beautiful.

Interviewer [00:00:11] You forget what I have... like I don't have up though.

Interviewer [00:00:14] OK, I attached it to the calendar invite. So that should make it easy to open up so you can read the consent statement.

Male Interviewee 2 [00:00:29] Just the bottom line. Right?

Interviewer [00:00:30] Yes

Male Interviewee 2 [00:00:32] I have read the informed consent materials and have received answers to any questions I have asked. I consent to take part in the study.

Interviewer [00:00:40] Great. Thank you so much. Thank you so much for taking the time to do this. I'm going to dive right in. I'm going to ask you a series of questions about your work from home workspace. And just so you know, there are no right answers to these questions. So feel free to answer how you're feeling, how you're thinking. No right answers. No pressure. Just however it is. All right. So to get started. Could you please tell me about your work from home workspace? Why did you choose that location? How did you design it at all to suit your needs? Would you add any features or objects in the space, that kind of thing?

Male Interviewee 2 [00:01:14] Well, it's kind of just my gaming station to start off with, to add a work laptop, which sits kind of jammed into these is kind of what I did and I connected it all together now so I can flip between screens that way. I really haven't adjusted it any more outside of that. And it wasn't necessarily... It's not necessarily the best setup right now as it moves, if I could shelve some things.

Male Interviewee 2 [00:01:43] And spread my monitors out a little more. That would make more sense because the monitor, my laptop, my work laptop is sitting where my mouse is for my gaming setup, which jams everything together a little bit. And it's not necessarily the best setup. And the monitor, the laptop covers one of the other monitors.

Interviewer [00:02:05] It just little cramped?

Male Interviewee 2 [00:02:07] Yeah. Just to expand that out a little bit would be the only thing that I guess I would like to do in the future. But that's kind of how it happened. I just took a gaming setup and just flopped the laptop down here. I didn't think were gonna be here this long.

Interviewer [00:02:21] I hear that, yeah, I don't think anyone did. Can you tell me a little bit more about the rest of the room and the space that your station of in?

Male Interviewee 2 [00:02:31] It's it's just. I guess you would consider it finished basement. It's just the drywall, it's not mudded and taped... Insolated.... Other than that it's also kind of a storage...Kind of a storage area for my...oops sorry hang, I'm going to try to kill my background. And so you'll see that....It's also a storage area for our other business, lot of glassware and things in the background. It's kind of a mess because we're going through a growing portion with our children as they're getting out of certain toys. And so we're trying to get rid of some that were in storage, so it..... Now, currently, it's just a giant mess. But my little corner here is is....off limits.

Interviewer [00:03:26] Ah I see, I see - a little spatial separation.

Male Interviewee 2 [00:03:27] Yeah. For me, the basement gets a little cold at times, but since I'm the only one here, I can adjust it. But then I go upstairs and it's, like, eighty five degrees.

Interviewer [00:03:37] Yeah.

Male Interviewee 2 [00:03:39] It wears on the heat a little bit. But since nobody is really around, there's blankets and things too... wearing slippers...

Interviewer [00:03:48] I hear ya.

Male Interviewee 2 [00:03:49] Yeah.

Interviewer [00:03:50] Do you have a window in that space at all?

Male Interviewee 2 [00:03:55] It's I don't know what to call. It's not like a full window.

Interviewer [00:04:00] No ...it's just like a high....high lite window.

Male Interviewee 2 [00:04:02] It's just like when you hit the spot lighter orit's not an egress, it's like where you could make an egress but....

Interviewer [00:04:11] Escape through the little...OK. So it's higher towards the ceiling and it's relatively small. Do you get much daylight from that window?

Male Interviewee 2 [00:04:16] No (laughing).

Interviewer [00:04:17] No. OK, that's good to know. It's just good to ask. And can you see out of it at all?

Male Interviewee 2 [00:04:23] Well, if I. Yes, I.... I uh.... I put up just some pieces of foam, so....cause it provided a lot of glare when there is sunlight coming in. So that's part of the reason why I don't get much sunlight is that I have it blocked off. But yes, I wanted to, I could, but it's just the view of another house because its at house level in between the two buildings. So much to look out anyway. Look at anyways.

Interviewer [00:04:53] OK. Uh...OK. So the next question is what physical features of your workspace and work area do you like the most? and why?

Male Interviewee 2 [00:05:06] Well, it was set up for me to game. So the ability... like my ability to just plug in my laptop, even though there wasn't a physical space for it, is very nice for me.

Male Interviewee 2 [00:05:17] I can rotate between the screens as I want to ...even kind of better so than I can at work, because that's the way I had it set up and had it designed. I also have made access to home amenities. So rather than having to spend X dollars on caffeine all day long, I just have a case of Mountain Dew or a coffee machine readily available right now. Those are also very nice.

Male Interviewee 2 [00:05:46] The other side too is, it's kind of the ability to....Like, shut down for a few minutes and just stretch, or if I turn the microphone off, maybe vent to myself a little bit about a particular issue, I'm having, but.

Interviewer [00:06:03] That's the kind of...the privacy ability.

Male Interviewee 2 [00:06:06] Yeah.

Interviewer [00:06:08] Gotcha. OK. So then on the flip side of that, are there any physical features of your workspace that you dislike and why?

Male Interviewee 2 [00:06:16] It's just a little small. This is it wasn't designed to have the third screen involved. Realistically, if I could get some type of just mounted shelf to put the laptop, instead of in front of my two monitors, up. And then it could sit there and that would give me the mouse space back and I wouldn't feel like I was always jammed in. Just cramped. Temperature is another thing that I kinda just tolerate because it is what it is. And I'm too cheap to have it be that warm upstairs (laughing). Other than that it's nice. There's um.... I really don't have any writing space, but that's really not necessary for my particular job.

Interviewer [00:07:06] Gotcha. All right. So then if you could add one physical feature to your workspace... And try to think beyond... I mean, your desk is an important part of that, but there's also sort of beyond that. But if you could add one physical feature, what would that be?

Male Interviewee 2 [00:07:22] Well all things considered, adding a sit-stand would be really nice...the ability to go up and down and change that.

Male Interviewee 2 [00:07:39] Uh...For me, too. I don't know, maybe a shelf, just like I think I would like to be more spread out and just I would like more space. At work because there's a there's the ability to have a everything in front of you and you had your own desk and everything's kind of moved out. Even though there was a limited amount of space, it seemed like there was more area of surface area for.

Interviewer [00:08:08] Yeah. I feel like the desks at work were fairly generous. Mine is certainly much smaller than the one I had at work. All right. So is there anywhere else in your home that you sometimes do work?

Male Interviewee 2 [00:08:27] On occasion, I'll take it. I'll take it upstairs. We have an island in our kitchen that I work from and I'll just set it there. The wife has demanded a specific angle at which the camera doesn't show that our house is a mess. But then. But when. When it's the that. That's usually when my kids are home and I'll just have it sitting there and it kind of just faces the refrigerator and I mobile around it and I only check in. And again, this doesn't necessarily... this only really applies because of the Helpline being how it is. At times I'm watching loading bars and I don't have to be 100 percent at my machine. And. Or if I can, I could be talking to someone... And not need to... Be responding to questions and not need to be directly in front of the machine, so that helps, too.

Interviewer [00:09:17] OK, so then the reason you work from your kitchen is, there's kids? Or?

Male Interviewee 2 [00:09:24] Yeah, that would be.... Because then I have... I can keep an eye on them.

Interviewer [00:09:28] I see. OK. And do you have many windows from that space? (Male Interviewee 2: Yes) Or is it a more enjoyable environment or do you like this environment (basement) better.

Male Interviewee 2 [00:09:39] Well, I lose the other screens when I do that, because these are not mobile. So I like this environment more. But it gives me the option to....Interact with the kids keep an eye on them, make sure they're not breaking things. And feed and help them with their ...uh...their classwork and things to that extent too. So it is.... There's more access to windows. There's lots of windows, there's a sliding glass door. You can see more outside, there's more light. It's so yeah, it's nicer. That's just not, especially for my job, there's not as mmmm.... There's not as good access to the resources that I need to be to ...either multitasker or look things up as we're working or research as I'm doing it, or just simply be on more than one machine at the time.

Interviewer [00:10:35] Yeah. OK. OK, I get that. And how old are your kids?

Male Interviewee 2 [00:10:38] I have a five year old and two year old.

Interviewer [00:10:41] Oh wow, that's young....all right. Good to know. All right. OK. So I'm going to share my screen real quick and there's got me a definition which I will read to you, and then I'll ask you a question about that definition.

Interviewer [00:10:56] All right. Can you see my screen?

Male Interviewee 2 [00:10:57] Almost, there we go.

Interviewer [00:10:59] OK, perfect. So connection to nature is defined as the extent to which a person considers themselves a part of the natural environment. So with that definition in mind, do you feel connected to nature when you're in your work from home workspace?

Male Interviewee 2 [00:11:14] (laughing) No.

Interviewer [00:11:16] Can you say why not?

Male Interviewee 2 [00:11:18] Well, it...I'm in a kind of a bomb shelter. I mean, for lack of a better word, there's one...18 by 48 inch window that gets out and it's.... Everything's controlled.... There's not.... The airflow is from the you know, our ventilation, it's not like I can open a window. I suppose I could open that window, but I couldn't tell you the last time it was open. Um.... The basement itself is a little...I mean. It's a little musty. It's not bad, but. Yeah, it's definitelylook forward to going out. You know...you walk the dog once a day or whatnot, but as far as my work environment, yeah, that'snot at all.

Interviewer [00:12:08] Gotcha. All right. Well, this question doesn't really apply then... I typically ask, are there any physical features of the work from home workspace that you associate with a sense of connection nature. But it's just sort of nil?

Male Interviewee 2 [00:12:21] No.

Interviewer [00:12:22] Yes. OK, that's fine. All right. I'm going to do the same thing again. Share another definition and ask another question. All right.

Male Interviewee 2 [00:12:33] (looking around) I don't even have any plants.

Interviewer [00:12:37] All right. So well-being is the state in which individuals can realize their abilities, handle everyday stress, feel like they're working productively, and feel like they're contributing to the community. So sort of an overall sense of well-being. So with that in mind, do you feel a sense of well-being when you're in your working home workspace? Why or why not?

Male Interviewee 2 [00:13:02] Yeah. For me, almost more so because there's less distractions...than at work, and that may seem weird, but I can put my head down and just ignore things. And there's not a chance that someone's going to come by and tapped me on the back and say, hey, can you help with this? A big portion of our job that was....of the helpline's job that is gone now or doesn't exist because of the way we work now. We used to be involved in a lot of physical meetings and just start it up. Wait. Make sure everything's running smoothly. Get the high sign from whoever is in the meeting. And then you take off. You start five, six of those in a day and you're 10, 20 minutes a pop. That covers a lot of time.

Male Interviewee 2 [00:13:53] Soit's not a bad thing. It's just a different thing now. Whereas now and will sit in meetings will almost produce them. But it's something that it's in the background and I can still be working on something else if I want to, because I just have to make sure the meeting's running well. And I know I have cues for my portion of the meeting that I'm producing. So.

Interviewer [00:14:17] All right. So that sort of addresses the productivity aspects. But do you feel like your work from home space, helps you handle your stress and things like that?.... Sort of linked, I guess. But....

Male Interviewee 2 [00:14:26] Oh, yeah. Because the best part is the ability now to.... Throw a podcast on and mute yourself. Throw....uh.... Listen to the music that you want to.... Look... Dog every once in a while comes down and visits and that's kind of fun to so it's things like that....That if I get pent up, there's a better outlet for it. Whereas at work.... If you were in the office, it wasn't ...there wasn't so much just the place that you could like..... Go play fetch for ten minutes just to feel better.

Interviewer [00:15:05] Sure. No, I get that it's nice that the tiny break (mumble) to sort of disconnect.

Male Interviewee 2 [00:15:10] Yeah.

Interviewer [00:15:10] Yeah. OK. So then are there any physical features of your work from home workspace that you associate with a sense of well-being?

Male Interviewee 2 [00:15:21] I think one just that it's at home. I mean, I have.... I've got a mini fridge within arm's reach that has caffeine. So that's an easy go to there.

Male Interviewee 2 [00:15:38] It's there's.... There's blankets and pillows here. Quick access to food, I guess, too and snacks. But as far as physical features go. I don't know, it'sI have a corkboard here that's kind of my own little....like memory board of events through my life and things. And that's that's fun and relaxing for me to see. Most people do at their desk. They have pictures and things and they set it up. Right. And for me, this is kind of.... My ability to really just have that sit there. I mean, at work, I really just had, like, the cards that's like years of service or what not. So I had those stacked up, and that's pretty much it.

Interviewer [00:16:29] Gotcha. All right. You mentioned a second ago when I was pulling up the definition that you don't have any indoor plants in your space.

Male Interviewee 2 [00:16:39] (laughing) No.

Interviewer [00:16:41] Can you tell me more about that and why? Why not perhaps?

Male Interviewee 2 [00:16:44] Well, I don't even...One, I don't know if I could keep any down here without it dying, because it's if I'm not here, it's pitch black. The second thing is, I am not good with plants. This... what are the ones that we made? It's aloe vera. It wasn't aloe vera plants, but...

Interviewer [00:17:07] Oh the succulents...

Male Interviewee 2 [00:17:09] The succulents...? I murdered two of them. And there not supposed to be easy to kill. I.... It's bad.

Interviewer [00:17:17] Have you ever considered any fake plants?

Male Interviewee 2 [00:17:20] Fake plants? No.....Well, two fold for me, one, I guess it doesn't necessarily matter to me. And the second thing is, I don't know where I'd put them down here.

Interviewer [00:17:34] Yeah, that makes sense. All right. So then just a general question. Do you feel like exposure to nature affects your well-being? Why or why not?

Male Interviewee 2 [00:17:47] I'd say yes, I definitely look forward to going upstairs and outside, even for a few minutes. I'm not angry with the fact that I can't see anything from from this point. I guess it's offset....by the other benefits that I have of being home. But even when I was at work, I mean, you look outside, it was just the twins stadium and a concrete... You know a....concrete platform where the tram went by. So. Yeah, I mean, it helps that I have the ability to go outside and stretch if I want, but I guess it's not a make or break for me.

Interviewer [00:18:34] And do you often get exposure to going outside...do you get the chance that frequently?

[00:18:40] I probably do two or three times a day for ten or fifteen minutes. We. Take a little walk once in a while with... For lunch. Walk down to ...there's a little restaurant down the road. So I get some to go food and back. It takes about 15, 20 minutes.

Interviewer [00:18:59] And you mention you occasionally walk your dog.

Male Interviewee 2 [00:19:01] Yup

Interviewer [00:19:03] Is that usually after work? or?

Male Interviewee 2 [00:19:07] So Tuesdays and Thursdays I go and it's a four block walk to the elementary school where my five year old's in kindergarten, so we'll walk back and forth on those days. And then I would say probably one or two days we go up to the cafe just for lunch and they give him treats, too. I think they like the dog better than me. Yeah, that's probably about it.... There's not a.... It's definitely not like a regulated "at one I go for a 20 minute walk" or anything...its its....whenever or whenever he gets annoyed too so.

Interviewer [00:19:49] And that's something you I think you kind of mentioned earlier, that it's different from when you're in the office?

Male Interviewee 2 [00:19:56] Yeah. That didn't exist at all. I mean, I guess there was never a thought like, hey. I'm going to go take for lunch, I'm going to go take a walk. I mean, for me, unless I walk to like Darby's or Holland holiday to get lunch, that was about it.

Interviewer [00:20:14] Gotcha. All right. So then aside from well-being, do you feel like the physical environment from your work from home space is meeting your your other needs in terms of being able to do your job effectively and things like that?

Male Interviewee 2 [00:20:29] Yeah, for sure. My, my, my setup is easier for me to use because I've built it that way, other than being scrunched. We've talked about that. It's....it's....I have the ability to switch between monitors, roll between machines I'm looking at. So, for me, I can be on multiple machines at once and flip through them just using a kvm switch.

Interviewer [00:20:58] Great. Great. All right. So that's it for me in terms of structured questions. But I do want to ask sort of generally, do you have any additional comments about your work from home space, room, or the work from home experience that you want to share?

Male Interviewee 2 [00:21:16] I mean, nothing off the top of my head. I guess, for me in IT where ...it might be a little different angle that that we look at things, because most of the time when I get done with work, I'll shut the laptop down and I'll just set it here and just flip over to video games (laughing). So I spend I spend a lot of time in this this physical space. And I had even before the work from home portion. I mean now it'll be eight hours and I'm working, but I used to come home and

play video games as it was anyway. So this space was set up to kind of be comfortable for me anyways. The only.... Again, the only portion that I really would.... Say I miss is the sit stand or or because mine was just a higher desk with a higher chair. So then I could stand at it if I wanted to anyways. And that was the only thing that I do miss, is... I feel like I'm sitting all day long now, which I don't think is the greatest. But.

Interviewer [00:22:18] Right. OK, so just sort of just.... I don't normally ask this, but I'm curious because you mentioned gaining multiple times. The game that you play, are they sort of in beautiful scenery kind of worlds or is it.... my husband plays some games.... I don't really look, I don't know what goes on.

Male Interviewee 2 [00:22:38] So there's a couple different things to play it. I do play World of Warcraft a lot. That is a fantasy environment in its own world. And the terrains can be anything, anything from apocalyptic to jungles to sands and regular cities. So, yeah, it can be. I play first person shooters too, but those are usually set in, like, war time frames, that it could be World War Two, depending on the one, could be more apocalyptic like end of the world type of thing, or maybe even just futuristic space battles. But I guess.

Interviewer [00:23:28] Neat. Ok. Great. Well, any last thoughts before we sign off here?

Male Interviewee 2 [00:23:35] No, that's all I have.

Interviewer [00:23:36] Great. Well, I really appreciate you taking the time. And just so you know, I'm finishing collecting interviews or running the interviews now and then I'm going to be analyzing the data from the survey and from the interviews over the next couple months. And then I should have something to report back to you guys in the early spring. So hopefully we can get some useful information from this.

Male Interviewee 2 [00:23:56] Sure. If I can help at all with anything else, let me know.

Interviewer [00:23:59] We'll do. Thank you so much Male Interviewee 2.

Male Interviewee 2 [00:24:00] No Problem.

Interviewer [00:24:00] Take care.

PNS Interviewee 1

Interviewer [00:00:01] And did you have a chance to review the informed consent materials before our meeting?

PNS Interviewee 1 [00:00:06] Yes, I reviewed it.

Interviewer [00:00:08] And can you read the statement at the end.

PNS Interviewee 1 [00:00:11] Statement at the end...I have read the informed consent materials and I've received answers to any questions I've asked. I consent to take part in the study.

Interviewer [00:00:19] Perfect. Thank you so much. OK. So I'm going to dive right in to asking you questions. It's going to be a series of questions about your work from home environment. Please keep in mind there are no right answers to any of these questions. Please just feel free to answer however you're thinking or feeling. No right answers, totally low pressure, doesn't matter. All right, so first, we're going to start with.... Could you please tell me about your work from home workspace? Why did you choose that location? Did you design it at all to suit your needs? Did you add any features or objects to the space, that kind of thing?

PNS Interviewee 1 [00:00:52] Well, my work from home setup was actually designed in the house as a study or work area. So I'm just using it as it was designed.

Interviewer [00:01:02] OK.

PNS Interviewee 1 [00:01:05] And the only thing we added was just brought in a desk, but it was set up that way to be a study.

Interviewer [00:01:15] Why did you think that study was the most appropriate space? Any particular reason?

PNS Interviewee 1 [00:01:21] Because it's good that it's a separate space. It's designed to be a work area and it's not part of the living space. When you're here, it's like this is the work room and this is where you do your work. And we don't do anything else in this room other than work. So it's good....It's a good break between home life and work life, even though we're in the same house.

Interviewer [00:01:48] Yeah, no, that makes a lot of sense. And I see that you have a window in your space. Was that a factor in selecting the room or can you tell me more about what you can see out the window and that kind of thing?

PNS Interviewee 1 [00:02:00] Sure. The window was not a factor in selecting the room. There are windows and every room in our house. Quite a few of them. Really it was because it was... It was... The architect designed this to be a workspace.

Interviewer [00:02:13] OK.

PNS Interviewee 1 [00:02:15] I do have this desk set up so... There's a window in front of the side. I do have the desk set up so I can see out the window. I did have to orient the desk this way because it would have been too much glare because there's too much of a window this way. So the windows also kind of affected the way we set up the space.

Interviewer [00:02:35] OK.

PNS Interviewee 1 [00:02:38] Just in terms of being able to look at the monitors and not being too distracted because the streets here with people walk by... walk their dogs and all, so.

Interviewer [00:02:47] So you mentioned the street. Can you tell me more about the view out the window, what you can see?

PNS Interviewee 1 [00:02:54] Sure. It's the streets actually up. We're on a hill. But because we're on a a D shaped road, it's not a thoroughfare. So there's very little traffic. It's mainly people walking their dogs, and walking because it's not a busy road. So I can't really see the asphalt or anything. I just can see that the edge of the road. And then there's, you know, mulch and greenery and trees that I can see.

Interviewer [00:03:27] Can you hold on for just one second. My dog just finished her lunch and she wants her Chewy. Otherwise, she's gonna be annoying. Just one second.

Interviewer [00:03:47] Thanks. All right. So can you tell me which physical features of your workspace, your study, do you like the most? And why?

PNS Interviewee 1 [00:03:59] Inside the room or outside the room?

Interviewer [00:04:01] Either, both.

PNS Interviewee 1 [00:04:06] Inside the room, I like that there's some wood paneling. It's kind of fits in with the general setting of the space. Outside the room, you know, I just like being able to see the trees and the weather, but mainly I enjoy seeing the animals that go by and feeling connected to the neighbors because we all know each other now and wave and say hello.

Interviewer [00:04:37] Do you think you know each other more now because of the lockdown?

PNS Interviewee 1 [00:04:43] Yes, definitely. Actually, our neighborhood there is... Because it's off-street basically every Friday there's been like an outdoor neighborhood get together on the street. So everybody comes and we stand apart and have our cocktails on Friday, happy hour and definitely getting to know more people. But then even folks that aren't part of that gathering. It's just because you see them every day. You just kind of get to know them and know their dogs and the routine and also. Makes you feel a little more connected.

Interviewer [00:05:21] Sure. That's sort of a interesting silver lining to the whole situation. Yeah. So on the flip side...Sorry go ahead...

PNS Interviewee 1 [00:05:30] People were really... At the beginning of COVID and people were like. Very regular. Like every day at the same time they walk. But then as time has gone by, it's gotten a little bit more sporadic and less disciplined.

Interviewer [00:05:44] That sounds about right. So on the flip side of my previous question, what features of, physical features of your workspace, indoor or outdoor, do you dislike? Or do you like the least I should say?

PNS Interviewee 1 [00:06:03] I kind of...I dislike it.... Inside that the the desk set up, it's not very ergonomic. I don't have my sit stand desk. So a lot of times I'm kind of uncomfortable by the end of the day. Even though we have a separate room, it's still. Like, you know, we still have distractions. You know, my husband walking back and forth and...Just noise. But it's not that bad because he's in another room, so we don't have too much of an issue, but occasionally there's a... I need to mute because I'm on a zoom and tell him to be quiet. Just because we've got that... But but it's not as bad as it would be in the open office.

Interviewer [00:06:52] That's true.

PNS Interviewee 1 [00:06:55] Even though I just said it's good getting to know people. It's also there's times when I like I see the people I know, but I don't.... I'm trying to focus and I kind of have to pretend like I don't see them because I want to work and not have to stop and do the compulsory wave and everything, so.

Interviewer [00:07:12] Oh, sure.

PNS Interviewee 1 [00:07:17] And then, you know, even though it's nice outside and you see changes, it's still it's the same view that you been looking out for six months.

Interviewer [00:07:28] Yeah.

PNS Interviewee 1 [00:07:30] Where you don't have that physical, physical break. Where you're leaving the house and you're going commuting to the office and then you're in the office and in between, there's that transition period. You just don't get that here. So....

Interviewer [00:07:45] Yeah, that can be kind of frustrating. It really can. We're in the same office and he sits right next to me and we have a two bedroom apartment. And so it's like we're here together all the time. And that's it. Anyways...So then if you feel like if you could add one physical thing to your workspace object or a window or another window or something along those lines could be anything if you could add one physical feature to your workspace. What would it be and why?

PNS Interviewee 1 [00:08:14] Physical feature? Probably a sit stand desk. Just because it's... It's just uncomfortable.

Interviewer [00:08:21] Sure, year the ergonomics is a big, big thing. Were you able to go and get your, um, get your chair from the office?

PNS Interviewee 1 [00:08:29] No, I have a desk chair, but it's... I've always struggled with being comfortable working. So, I mean, we did, actually. Because it's like the desk is like an Ikea boxes like like the wooden boxes with a glasstop. We did actually cut the bottom of the boxes down off to bring

the table down a little bit so that I could actually see my feet on the ground. But, it kind of needs to be even lower than it is now. But it also needs to be usable for Steve eventually. And he's very tall. So...

Interviewer [00:09:07] Yeah, on the flip side, that makes sense. OK. Is there anywhere else in your home that you sometimes work or around your home?

PNS Interviewee 1 [00:09:19] Mhmm...yes, sometimes I work in the dining room table. That's a good break to just move the computer out of the dining room table. It does provide a little less privacy and more noise. For from my husband. So that's good, but sometimes if he's out, I'll also, and it's just an informal meeting like internal, I'll just sit on the couch. If it's just... I don't have take notes or anything. And that's a good break. But it's...You kind of just get in the habit of you sit at your desk all day long and take all your meetings and have even less breaks and get up even less than you would if you were in the office. I haven't figured out why, but that seems to be the way it is.

Interviewer [00:10:06] Yeah, I'm not sure. So when you go out and work in those other spaces, is it mostly just to get a break from your office or is there any other reason.

PNS Interviewee 1 [00:10:14] Just to get a break.

Interviewer [00:10:16] OK, great. Great. Alright, So I going to share my screen and there's going to be a definition on there and then I'll read it to you and ask a question about the definition.

PNS Interviewee 1 [00:10:25] OK.

Interviewer [00:10:26] OK.

Interviewer [00:10:30] Can you see my screen?

PNS Interviewee 1 [00:10:32] Yes.

Interviewer [00:10:33] OK. So connection to nature is defined as the extent to which a person considers themselves part of the natural environment. So what that definition in mind, do you feel connected to nature when you are in your work from home workspace? Why or why not?

PNS Interviewee 1 [00:10:49] Yes, I do feel connected to nature when I am in my work space because I....Physically know the layout of the trees and the types of trees and and plants, and if they need water, they don't need water. I'm can visually see changes in them, but also, more importantly, feed the animals, the birds and squirrels. And I actually know individuals now because I've been observing them so long. So that really makes you feel a connection, especially with the squirrels. They have names now. So I think that's pretty connected when you start to name the wildlife outside.

Interviewer [00:11:37] Yeah, that's incredibly connected. They have individual personalities, almost. Don't they? Squirrels? So are there any physical features of your work from home office space on the interior that you feel like connect you with, um, with nature?

PNS Interviewee 1 [00:11:54] Well, I mentioned the wood paneling in the house. The fact that there are windows in every room and it's a wooded area makes it really easy, (mumbles). So we then we have potted plants in the house throughout. So, like a lot of times, they'll have potted plants and then a big window and then right outside all the trees. So it's kind of bringing it inside, too. So it's not a big cut off between nature outside, nature inside.

Interviewer [00:12:25] Yeah, it sounds very immersive. That's nice. All right. So I'm going to do the same thing again. Share another definition and then read it to you and then follow it up with a question. So well-being is defined as the state and which individuals feel like they can realize their abilities, handle everyday stress, work productively and feel like they're contributing to their community. So with that definition of mind, do you feel a sense of well-being when you're in your work from home workspace? Why or why not?

PNS Interviewee 1 [00:13:00] I would say right now, no, I don't feel a sense of well-being, and that's because I don't have choices. I would very much like to have the choice to be able to go into work or to be able to even go work from a coffee shop. But right now, we don't have that choice. The most choice you have is to move from one room to the other. But that's not a big change in the environment because it's a small...it's a house. So...Even though I feel much more fortunate than most people because of the surroundings. And it's made it a lot better. I still don't feel like I have much choice and so my well-being isn't super high right now.

Interviewer [00:13:51] Sure, that makes sense. Can I... About stress, specifically, though, aside from the issue of control. Do you feel like there's any physical features of your work from home office that helps you manage the everyday stress that you're dealing with?

PNS Interviewee 1 [00:14:08] Yes. I mean, just basically the environment that I'm in. That it is such a refuge. I don't have to deal with outside noise, traffic noise. You know, anything like that. But I'm sure you've talked to other people with the smoke and the heat, that also has been a whole 'nother thing add on top of the work-from-home with COVID. So...

Interviewer [00:14:37] Yeah. Absolutely. Actually for the sake of the recording, could you describe that a bit more, what it was, what it was like at your house with the, with the wildfires?

PNS Interviewee 1 [00:14:46] Sure. Well, we are in the...We are located in a wooded area that is a very high fire danger. This...Very close to... The next neighborhood over had a very huge fire. Over three thousand houses burned down. Multiple people lost their lives. So it's very present for us. And so it is... It is stressful because a couple times at night, the winds changed and smoke is come into the area and you smell very strongly, but you don't know if that's the smell from fires that are 10, 20 miles away or if your neighborhood is on fire. So then you have this moment where you're looking online and checking different feeds and trying to see... Is the smoke because the winds changed or smoke because our home is on fire? And so it is kind of a constant level of stress. When that's happening. And just in terms of the smoke from the fires in the region, yeah, it's been very bad. The air quality has been bad. But then also increasingly the temperature is going higher every summer. So we had some days where it even actually got to 100 up here one week. But, you know, it's in the 90s and you can't open the windows because the smoke is too bad. Air quality is too bad. So... You can't leave the house. Cause of COVID.

Because all the stuff that you could leave the house for at that point in time was outdoors, outdoor eating or walking, and then it's very hot in the house. And then the air quality is bad. And you have this, this sense of worry about if, if your neighborhood is on fire. So, it's... It hasn't been very fun.

Interviewer [00:16:34] Yeah, no, that sounds pretty rough. And I assume you guys have no air conditioning or anything.

PNS Interviewee 1 [00:16:38] No.

Interviewer [00:16:39] Yeah. That's pretty standard for the area. Yeah, that sounds incredibly stressful. That's a lot going on. I'm sorry you've had to deal with that. I mean, certainly it's been all the COVID issues here, but we... The fires are non, non-issue. So that's been one layer that we haven't had to deal with, thankfully. OK.

PNS Interviewee 1 [00:16:58] Well and then we'll just we hope there's no...no earthquake then too.

Interviewer [00:17:02] Yeah, yeah. That's always an underlying concern in California. All right. So generally, do you feel that exposure to nature affects your well-being? Why or why?

PNS Interviewee 1 [00:17:18] Yes, I do feel it affects my well-being positively because it is a refuge. You do have physical interactions. I am... I'm having...I mean, like physical interactions with the animals in terms of going out and feeding them and, you know.... Watch. I guess I'm not touching the animals, but I'm going out and feeding them and giving them water and it's giving me something to do and look forward to. So.

Interviewer [00:17:52] Yes. No, that's great. And how often? I mean, I know you've mentioned that you go outside sort of around your home a lot. Is that is that an everyday thing? Is it multiple times a day? Do you do other activities outdoors and around your home?

PNS Interviewee 1 [00:18:07] And that's... Not... I don't get out that much, and that's probably contributing to my lesser feeling of well-being or feeling less well. Well. I do need to get out more. But, you know, two or three times a day I'm outside, but just within the vicinity of the house. So.

Interviewer [00:18:30] OK, that makes sense. All right. I just have sort of one more question that's structured and then there's time for sort of general comments. Aside from well-being, do you feel like your work from home workspace is meeting your needs in terms of being able to get your... Get your job done, to do it effectively?

PNS Interviewee 1 [00:18:54] Yes.

Interviewer [00:18:54] I know you mentioned that ergonomics was a bit of an issue. Is there anything else that's causing frustration?

PNS Interviewee 1 [00:19:01] No, I don't think from a physical perspective or layout perspective, anything's getting in the way of me doing work. I think it's more of the motivation and related to choice and options that makes it tough.

Interviewer [00:19:17] OK.

PNS Interviewee 1 [00:19:17] So that becomes more of an internal thing and less of a physical space thing.

Interviewer [00:19:23] Yeah. OK. So finally, do you have any additional comments or thoughts you'd like to share about your work from home experience or your work from home space at all?

PNS Interviewee 1 [00:19:39] No, I don't think so, I guess the only thing I would say is... I'm very connected to my home space, my work-from-home space and the animals, and that's kind of like my thing. And I realized at the beginning I was like talking way too much about the squirrels and the birds and like other people don't really care about it. So... But that was like that's what I.... What's happening around me.

Interviewer [00:20:07] Yeah yeah, no, that's your everyday.

PNS Interviewee 1 [00:20:08] Yeah. Just so understanding that everybody's in different situations, you know, feeling fortunate that, you know, I'm not in a one bedroom apartment with a baby and also a partner that's also working from home. So I do definitely... Am aware that we're in a good situation where we're at.

Interviewer [00:20:28] OK, great. I'm going to stop recording.