



Social Utilitarianism in Digital Interactions and Distant Worlds

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Abstract

Online social networks are increasingly consequential in individuals' professional and personal lives, as many people engage online to create and maintain meaningful relationships and satisfy their needs for social connection. People tend to curate their online representations (profile pictures for different websites, videogame avatars, bitmojis, profile page bios, etc.) with almost as much regularity as their corporeal (real-world) self-presentation. As such, the current study explored the socially utilitarian choices people make when presenting themselves in both the corporeal and virtual public spheres. Participants completed a questionnaire assessing various aspects of their self-presentation and behavior in real-life, social media, and online videogames. We found several differences in self-presentation strategies in both online and offline contexts based primarily on ethnoracial background, sex, and skin tone. Minority women (particularly Multiracial women) reported dyeing their hair significantly more than White women, and the overwhelming majority reported dyeing their hair a lighter color than their natural hair color. Women use more emojis and exclamation points in emails and digital interactions than men, and they are more likely to use skin lightening filters before posting a selfie on social media. In addition, we found a descriptive pattern indicating that straight women and bisexual women dating men use more filters than lesbians and bisexual women dating women. Finally, in online videogames, men who are below average height reported creating videogame avatars that were taller than they were, individuals with darker skin tones reported creating avatars with skin tones lighter than their own, and introverts reported that they pretend to be extroverted in videogames more than extroverts reported pretending to be introverted. This study highlights the importance



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of online self-presentation on people's social lives and the strategies that people utilize to align how they believe they are socially perceived with a more idealized version of themselves, or a version of themselves that will confer greater social capital than what they believe they naturally embody. Given the increasing possibilities of identity customization in the virtual public sphere, further research is needed to fully understand the complex relationship between online and offline self-presentation.

Introduction

The customization of one's identity and the curation of one's self-presentation are more possible now thanks to the technological advances in the years since Sir Timothy John-Berners Lee introduced the World Wide Web in 1991. Globalization was already helping humanity achieve greater cultural pluralism and the advent of social networking platforms in the 2000s furthered the sense that much of the world was becoming a non-local nuclear family.

What this meant on the individual level is that the curation of one's self-presentation became more important and more complex to manage, as it required maintenance in both the offline and (now) online worlds. Though the virtual public sphere added a layer of complexity to how we negotiate our identities, this new online modality in which we live a portion of our lives also provided new mechanisms for identity customization that are improbable, infeasible, or even impossible in the offline modality of our lives. As such, our study sought to examine individuals' propensity to engage in social utilitarianism in their self-presentation and identity management in both the online/virtual and the offline/corporeal worlds.

Previous studies have examined the processes that individuals go through in order to affirm their self-presentation and market themselves to themselves and others. Regardless of which impressions people try to express, they will only be effective if others accept them. According to Schlenker & Weigold (1990), good self-presentation always includes a trade-off between two factors: (1) beneficialness (providing the most favorable impression feasible) and (2) credibility (making sure the image you present is believable).

For example, if Kim Hye-jin, the only East Asian American student in her predominantly White American high school in central Vermont, dyes

her hair blonde, wears Louis Vuitton boots, and is regularly seen reading Harpers or listening to the latest podcast from BBC, it will afford her less signaling utility than if her British classmate, Hermione Potter, did the exact same thing. That is, the social utility of various self-presentation strategies is relative, and the potential social capital accrued differs as a function of one's social identity and the social context, among other factors. To that point, if Hye-jin introduced herself using her nickname, Jennifer, it would afford her more social capital than if Hermione went by the nickname Debbie.

Identity negotiation theory highlights the importance of negotiating sociocultural membership identity in intergroup communication situations (Ting, 2017). Individuals conform to various identity negotiation standards that promote smooth interpersonal relations and foster interpersonal harmony (Swann *et al.*, 2008). Generally, people avoid personas that do not align with essential parts of their identities. Instead, they prefer identities that are more consistent with definitions of who they are. In this way, the identity negotiation process entails a self-presentation strategy wherein individuals perform the identity that they wish to have acknowledged by others (Stets *et al.*, 2000).

Individuals are motivated to construct their identities using the discourses available in their eras and societies (Butler, 1997) (Foucault, 2008). Such motivations are just as present in the virtual public sphere as they have always been in the corporeal public sphere. In the realms of social media, profile pictures, MMORPG avatars, and Bitmoji, the mechanisms of identity construction have never been as numerous. Social media and MMORPG, in particular, reveal how one can construct an identity via linguistic performance, behavioral performance, punctuation performance, attire performance, visual digital body performance, personality performance,

help-seeking performance, and emoji performance as users assemble their digital identities through the techno social adaptations of various platforms.

In the next section we discuss different aspects of social utilitarian and proceed to discuss its application in one of the most immersive, anthropomorphized, virtual social contexts: online videogames.

Social Utilitarianism

"the literature has largely overlooked a distinct and potentially critical action that minorities might take to try to avoid anticipated discrimination: changing how they present themselves — especially in relation to racial cues" (Kang *et al.*, 2016, p. 3).

Social utilitarianism encompasses the tools people employ to manage others' perceptions of who they are for social reward optimization (Goffman, 1963). For instance, "Some recognizable names from the 18th century such as George Elliot and George Sand were pseudonyms for female authors who preferred to publish under a male name (Eleanor Blau, 1989)" (McAlpine, 2015). In short, female authors published their work using a male name to increase the likelihood that their work would be taken seriously.

Another good in-person example of social utilitarianism took place in 2020. A Black Indianapolis homeowner named Carlette Duffy felt that her property had been undervalued in two previous evaluations (Planas, 2021). For the third appraiser's house visit, Carlette went to considerable pains to keep her race hidden, including removing photographs of herself and her relatives, and had a White acquaintance pretend to be her brother. As a result, the appraisal value of Carlette Duffy's house had more than doubled. According to the Fair Housing Center of Central Indiana, Duffy's home was evaluated for \$125,000 the first time, \$110,000 the second time, and ultimately \$259,000 the third time when she hid the fact that a Black person lived there. In a similar real estate appraisal scenario in Florida, Alex Horton (White husband) remained in the house with the real estate appraiser as Adena Horton (Black wife) & their son (Multiracial) snuck out the back (Young *et al.*, 2020). They also took down all family photos, any pictures of Black people, and hid items associated with Blackness. As a result, "the Hortons received a second appraisal — \$465,000 — 41% higher than the first amount" of \$330,000

(Young *et al.*, 2020). (Young *et al.*, 2020). quoted Andre Perry's perfectly poignant statement that "When we look at Black assets, we judge them like we judge Black people. And so we reduce the value."

In these examples, the socially utilitarian strategy of concealing the ethnoracial background of the homeowner had a substantial financial benefit. Importantly, the success of Carlette's and the Hortons' strategy shares a painful/unfortunate component of Hye-jin's strategy to go by Jennifer instead of her South Korean name. In each instances individuals are experiencing a boost in their social capital by hiding a meaningful aspect of who they are.

In the following section, we discuss the ways in which individuals strategically interact with others when presenting aspects of themselves.

Interactive Performativity

People derive social rewards from the manner in which they interact with their peers in various social contexts, and this is true in both offline and online interactions. An everyday example of this in the virtual public sphere is the way that people use emojis, punctuation patterns/rules that are accepted (and largely expected) in digital interactions though they are ill-advised in any offline language courses, filters that change aspects of photos to communicate various aesthetics and/or moods, and other methods that people use to portray themselves in a favorable way. It is worth considering the extent to which individuals perceive that such actions are effective — or at least reinforcing - whether measured in views, LIKES, retweets, comments, and/or one's personal self-appraisal.

Emojis and Punctuation

Emojis are a significant aspect of social behavior in today's digital world. Emojis are pictographs used during communication (Miller *et al.*, 2016) and they have become a common mode of communication (Barbieri *et al.*, 2016). Moreover, in the realm of human courtship, emojis can be used strategically as affective signals (Gesselman *et al.*, 2019). Gesselman *et al.* study found that those who use more emojis with prospective partners before the first date had higher emotional and physical intimacy with them and were more likely to have success in forming a relationship with them. However,

understanding the precise context of an emoji is not abundantly straightforward. Emojis can be used ironically or intentionally, and often one emoji can pertain to many different interpretations.

In addition, decades of research finds that women report using significantly more exclamation points than men, and men are more likely to report that they generally do not use exclamation points in their digital interactions (Scates, 1981); (Rubin *et al.*, 1992); (Herring, 1994); (Winn *et al.*, 2001) (Colley *et al.*, 2002) (Waseleski, 2006). Taken together, it is likely that women interact in a more expressive manner than men in the virtual public square.

Filters

Compared to men, women tend to be more concerned with, judged more for, and experience more consequences based their appearance (Buss *et al.*, 2020). As a result, women are more likely to alter their appearance for socially utilitarian reasons (Krems *et al.*, 2020), such as more attractive women being more likely to receive help from strangers (Bhogal *et al.*, 2016), attractive servers earning more tips from customers (Parrett, 2015), women wearing cosmetics sell more retail products (Kulesza *et al.*, 2014), and women concerned with economic scarcity are more likely to alter their appearance for the acquisition of resources (Netchaeva *et al.*, 2016).

Posting pictures facilitates social interaction in the virtual public sphere (Lin *et al.*, 2012). According to (Bakhshi *et al.*, 2015), filtered pictures are 21% more likely to be viewed and 45% more likely to receive comments than unfiltered photos. Filters are used regularly for different reasons. For some, using a filter may mean blurring or hiding blemishes. For others, it may mean acquiring a tan without investing the time, sunscreen, and skin cancer risk of going out and getting one.

Moreover, the use of filters is influenced by the standards of different cultures and what would reap the most utilitarian benefits. For example, (Varghese, 2017) examined the lightning-filter use behavior of Indian women who shared their posts on social media. Varghese discusses Indian women's desire to have lighter skin and connects it to why light-skinned Bollywood actors are the ones with the most success in the Indian movie industry. It turns out that Indian women making themselves appear whiter, confers

socially utilitarian benefits. According to (Varghese, 2017), Indian women who appeared less South Asian and more White received more LIKES and interest from men.

While for some, using a lightning filter would mean maximizing their utilitarian rewards, the opposite holds true for others. A lightening filter would mean that they would feel 'washed out'. Instead, these individuals may opt for a filter that would give their photos a bronzed tan. In America, having tanned skin is culturally popular. A study by (Gillen *et al.*, 2015) found that individuals tend to rate tan people more favorably than their non-tanned counterparts in the US culture and hiring context. For these individuals, the social utilitarian cost of exposure to UV light may be worth it when they reap the utilitarian benefits of having tanned skin, and in turn, more positive reinforcement from society.

It could be the case that the strategies individuals employ reaches a state of habitus, an action executed with the same regularity as brushing one's teeth or taking a shower. At that point, it would no longer be a social strategy consciously adopted for social capital maximization. Rather, it would be an act enacted under a kind of behavioral autopilot, such that the action would continue even when it was no longer necessary or socially profitable. In addition, it is worth considering that actions can be appraised as reinforcing despite being ineffective and vice-versa. In this way utilitarianism can be understood as operating both actively and passively, by effect and by essence.

For instance, wearing glasses has socially utilitarian benefits even if the wearer dislikes wearing them. Utilitarian rewards can be accrued incidentally, with literally no intention from the person benefiting from it. If Priya wore contacts but they were bad for her eyes and she was forced to switch to glasses against her will, the utilitarian benefit of the glasses is embedded in their essence given that glasses are easier for others to visually see.

Indeed, the saliency of glasses at a distance (compared to contact lenses) is socially consequential. Glasses increase individuals' odds of a favorable verdict in court (Brown, 2011), decrease perceptions of forcefulness and increase perceptions of intelligence (Terry *et al.*, 1993), and

Black individuals wearing glasses are perceived as less aggressive/threatening and more attractive/friendlier (Brown, 2011). Thus, Priya may experience gains in her social capital when her ophthalmologist forces her to switch to glasses even though she dislikes glasses and is otherwise oblivious as to how they are beneficial to both her ability to see and how people see her.

Code-Switching

Code-switching entails shifting one's expression of speech, demeanor, appearance, and language in order to maximize others' comfort in return for fair treatment, quality service, as well as other opportunities (McCluney *et al.*, 2021). To optimize the comfort of others in exchange for favorable treatment, code-switching typically means changing one's manner of speaking, dressing, acting, and expressing oneself. People may create a self-brand with strategic adaptations to their presentation that help optimize their payoffs in the neoliberal marketplace of their platform of choice. They know how to effectively code-switch based on the respective audiences. This includes engaging in the strategic utilization of bitmojis, adherence to digital punctuation norms, and emoji use behavior in a manner they feel will produce the optimal ratio of corporeal benefits/rewards relative to costs.

Utilitarian Management of Various Social Identities

The process of utilitarianism includes a self-presentation strategy where the individual socially performs to decide who they are. We are constantly confronted with various forms of risk in our everyday lives. Hence, a key consideration for individuals is deciding how much can be rationalized to risk 'x' to avoid the expense of 'y' and vice versa. The utilitarian calculation requires that the benefits and costs arising from our actions be attributed to values and correlated with the benefits and costs resulting from other actions (Markkula Center for Applied Ethics, 2014). (Redmond, 2015) has built considerably on the principle of social trade, where parties pursue benefits in their exchanges where the incentives are more significant than the expenses.

It seems that each individual has a perceived standard of perfection (or at least optimization). Since individuals do not always have the means

to achieve their standard of perfection in real life, the next best is to vicariously experience their standard of perfection through one or more of their virtual identities. In other words, online identities can be deliberately crafted in ways that a real-life identity cannot, and individuals employ strategies to construct a favorable online self relative to their offline self in order to form a co-present identity in today's information age.

For example, physical improvements do not occur as quickly and are not as readily effective, and, of course, some improvements such as filters are not possible in the real world. However, an online self is made up of multiple facets that can be modified and improved with a mere click of a button. The public self, the "official" version of the person that they present to the world, requires routine curation in virtual spaces (e.g., LinkedIn, Facebook, eHarmony).

For conceptual clarity, it is important to note that code-switching is under the umbrella of utilitarianism, but they are not the same thing. Acts of codeswitching are utilitarian, but not all utilitarian acts are code-switching. An example of social utilitarianism that is not code-switching would be leaving an expired annual parking permit on your car so that people who may walk by in the parking lot know that you have the right to be parked there. For a person who has been racially profiled in the past, this would reduce the risk of harassment or unnecessary interrogation. In this case, the parking permit is more informative than the person's phenotype. It keeps them safe, especially the expired annual permits, because it shows a long-term presence.

Cyberspace is now a common venue for people to meet and foster meaningful relationships (Steinkuehler *et al.*, 2006). Thus, the online context offers a satisfactory facsimile of social connection to satiate needs for belongingness. According to the social compensation hypothesis, people who struggle to make social connections in face-to-face interactions will present themselves in socially utilitarian ways in social networks to enhance their interpersonal lives via online relationships (Schouten *et al.*, 2007). In the following section we will consider how this plays out in the MMORPG (online videogame) context.

MMORPG Videogames

Given their potential consequences in the social world, the influence of games on social utilitarian strategies and approaches to social interaction should continue to be investigated. Given their potential for societal effect, videogames should be seriously examined rather than disregarded as a pastime for children. To the degree that video games could affect racial stereotypes, sexual attitudes, immersion tends to intensify that because games are interactive. Gameplay affects players' racial stereotypes (Behm *et al.*, 2014), sexist attitudes (Breuer, *et al.*, 2015), and gender stereotypes (Kondrat, 2015). Videogames' "interactivity and immersive experience will intensify the effects" (Yi, 2019).

Videogames are among the most engaging, interactive, immersive, and reinforcing artistic mediums. As such, they must be interrogated as rigorously as television, which has been an instrument of transportation for prevailing ideologies of gender socialization & racial socialization (Chang *et al.*, 2015) *World of Warcraft*; (Consalvo, 2013) *The Sims*; (Daniels *et al.*, 2012). Blowing it off as if no one cares about games only succeeds in trivializing the increasing necessity to scrutinize their influence.

The norms of the real world, particularly in relation to sex, remain influential in the virtual distant worlds of MMORPG videogames (Eklund, 2011); (Lehdonvirta *et al.*, 2012); (Palomares *et al.*, 2010); (Yee *et al.*, 2007). Through the avatar and the freedom in its customization, the avatars embed in themselves the desires of the users in how they want to be perceived in the virtual space (Mancini *et al.*, 2017).

"The avatars are not the original bodies of the subjects, but they stand for them as interactive representations of the "original" subjects just like the picture archived in the social networks" (Liberi, 2018).

People may make ideally attractive avatars as they are more likely to be sought as friends by other avatars/gamers (Fong *et al.*, 2015). As such, East Asian, Black, Hispanic, South Asian/Indian, or Middle Eastern MMORPG gamers are less likely to create an East Asian, Black, Hispanic, South Asian/Indian, or Middle Eastern avatar for an MMORPG game world in which a significant part of your experience

and success is based on your interactions with other real-life gamers (Blascovich *et al.*, 2011) ; (Jong-Eun Roselyn Lee, 2014) ; (Kafai *et al.*, 2010). This is also associated with many gamers with physical disabilities creating avatars whose visual appearance differs from their corporeal selves (He *et al.*, 2015) ; (Park *et al.*, 2022).

Indeed, attractiveness matters for social desirability regardless of avatar sex (Dehn *et al.*, 2000); (Messinger *et al.*, 2008); (Nowak *et al.*, 2005); (Principe *et al.*, 2013); (Yee *et al.*, 2009), though attractiveness is more important for female (Waddell *et al.*, 2015), which is consistent with the ubiquitous influence of the male gaze in the real world (Bar-Tal *et al.*, 1976). From a traditional gender attitudes perspective, women always yield to others, while men are supposed to play a dominant role in sexual relationships (Kiefer *et al.*, 2007). As such, a female avatar (with a female name) who sends a message seeking assistance in the in-game chat is far more likely to see many male avatars show up to assist her than a male avatar who does the same thing (Willis, 2021).¹ The interaction between these two observations creates a pattern in which female avatars seeking assistance are more likely to receive it than male avatars, and female avatars' attractiveness influences the acquisition and maintenance of male avatars' attention/interest. In line with this, female avatars take more time with customizations, applying makeup, and/or coordinating outfits, regardless of the sex of the (Martey *et al.*, 2014). (Davies *et al.*, 2008). Davies *et al.* (2008) found that attractive women could successfully get male strangers to perform favors for them, "only to discover that the persuaders were not physically attracted to them." Put simply, if a female avatar is not attractive enough, a male avatar is not going to spend the 5 to 20 (sometimes 30) minutes to help her complete a dungeon, defeat a dragon, or some other challenging task in the game world.

In-game purchasing data suggest that female avatars are aware of this. While many items within a game can be obtained as rewards for quests, battles, or otherwise free of virtual or real charge, other specialized items must be purchased using actual real-world money. These items may be functional (provide some unique bonus on magic or defense) or decorative (purely cosmetic value). Female avatars are more likely to purchase decorative items for

self-presentation (Kim *et al.*, 2012). Notably, this holds true regardless of the sex of the gamer as both women and men playing as female avatars purchased more decorative items for the avatars.

In addition, more male gamers genderswap to play as female avatars than female gamers genderswap to play as male avatars (Ducheneaut *et al.*, 2006) ; (Isaksson, 2012); (Martey *et al.*, 2014); (Willis, 2021); (Yee, 2011); however, see Zhou *et al.*, 2022 for research on female gamers' gender-swapping). As explained in *Woman Like Me* (Willis, 2021), there are tremendous benefits to playing as a woman in MMORPG. The difference between playing as a Persian woman with a light-medium skin tone and playing as a Black male is equivalent to playing on easy mode versus hard mode. Life as a woman in MMORPG is the equivalent of playing the game on easy mode thanks to the preferential treatment we receive as female avatars from male avatars.

In most games, race is used as a heuristic cue of sociocultural attributes that gamers attach to various non-playable characters (npcs) based on their digital phenotype. As such, ethnoracial identities are reduced to a storytelling device that gamers use to orient the protagonist's interactions with npcs in single player (offline) games, and ethnoracial identities are utilized to maximize social utilitarian outcomes in MMORPGs.

Social rewards such as being socially embraced, feeling valued, and desirable to others can be acquired through the interactions individuals have with other people (Kawamichi *et al.*, 2017). Given that under a social utilitarian framework, people want to maximize benefits and rewards and reduce costs, we believe that people will perform their identity in a way that would optimize their outcomes. In this era of globalization, the virtual global public sphere we all carry via the phone in our pockets and on our other devices uniquely affords us the opportunity to optimize our self-presentation in the pursuit of social rewards. Thus, we conducted this exploratory study to assess how individuals present themselves in virtual spaces.

Methods

Participants

Participants were 370 undergraduate students (Mage = 20.31; range = 18-37; 302 females and

68 males; 41 bisexuals, 299 heterosexuals) at a university in the United States. The ethnoracial composition of the sample was as follows: 49.6% East Asian, 20.7% Hispanic, 12.4% White, 8.5% half-White Multiracial, 2.8% South Asian Indian, 4.4% Middle Eastern, and 1.7% inter-minority multiracial. All participants were recruited using the SONA system (Fidler, 1997) and were given class credit compensation for their participation in this study. In addition, this study took place during the 100% Zoom year, starting in Fall of 2020 and concluding in 2021.

Procedure

This study was approved by the institutional review board at the University of California San Diego (approval code: 201524XX; approval date: 10/5/2020). All participants completed an informed consent form before receiving and starting the survey. Participants began the survey by filling out demographic questions and then completed assessment questions regarding their actual and online identities. The duration of the time spent on the survey was approximately one hour. After participants completed the questionnaire material, they were debriefed about the study and assigned research credit.

Measures

We constructed a questionnaire survey to assess the utilitarian nature of identity formation, emoji-use, and punctuation use. The survey included questions that asked about demographics, personality traits, confidence, self-esteem, code-switching, avatar creation, and Bitmoji creation.

Results

Digital Interactions and Social Media

Punctuation Use

A chi-square test of independence found a significant effect for sex and using exclamation points in an email or text message, $\chi^2(2, N = 253) = 34.31, p < .001$. Women are significantly more likely to use multiple (!!!!) exclamation points (53%) than men (13.7%), and men are more likely to report not using exclamation points that much in general (47.1%) than women (14.9%). This is consistent with decades of research on gender differences in punctuation use (Scates, 1981); (Colley *et al.*, 2002); (Diaz, 2018) ; (Herring, 1994); (Rubin *et al.*, 1992); (Waseleski, 2006) ; (Winn *et al.*, 2001).

Moreover, White women are more likely to use more exclamation points, whereas minority women report using either exclamation points or a balance of emojis with exclamation points $\chi^2(1, N = 167) = 4.35$, $p = .037$. In addition, White men are marginally more likely than minority men to use multiple exclamation points (37.5% and 9.8%, respectively), whereas minority men reported being more likely than White men to use a single exclamation point (43.9% and 12.5%, respectively), though a plurality of all men indicated that they generally do not use exclamation points, $\chi^2(2, N = 49) = 5.33$, $p = .07$.

Skin Lightening Filter Use

A univariate ANOVA found a main effect of sex on skin lightening filters for social media posts, $F(1, 348) = 10.59$, $p = .001$, $\eta^2 = 3\%$. Skin lightening filters are used more frequently by women ($M = 2.9$, $SE = .11$) than by men ($M = 2.06$, $SE = .2$), consistent with previous research (Dhir *et al.*, 2016); (Elias *et al.*, 2018); (Varghese, 2017).

Emojis

A univariate ANOVA found a main effect of sex on emoji frequency in texts and emails, $F(1, 359) = 19.75$, $p < .001$, $\eta^2 = 5.2\%$. Emojis are used more frequently by women ($M = 5.34$, $SE = .09$) than men ($M = 4.42$, $SE = .21$). In addition, we found that emoji use was more frequent among bisexual women dating women ($M = 6.67$) than bisexual women dating men ($M = 5.62$), $F(1, 14) = 6.57$, $p = .023$.

Self-Presentation

Hair Color

A set of chi-square tests of independence found significant patterns associated with hair color. First, a chi-square test of independence found that women were significantly more likely to indicate their hair was dyed (30.6%) than men (0%), $\chi^2(1, N = 352) = 26.07$, $p < .001$. In addition, most women dyed their hair a color lighter (90.8%) than their natural hair color (9.2%), $\chi^2(1, N = 87) = 57.94$, $p < .001$. Moreover, naturally blonde women were significantly less likely to indicate dyeing their hair (6.3%) than naturally non-blonde women (32%), $\chi^2(1, N = 288) = 4.72$, $p = .030$. A chi-square goodness of fit analysis found that naturally non-blonde women were significantly less likely to indicate dyeing their hair blonde (9.6%) than dyeing it some other color (22.4%), $\chi^2(1, N = 288) = 4.72$, $p = .030$.

Next, a chi-square test of independence found a significant association between hair color and ethnoracial identity, $\chi^2(4, N = 273) = 15.66$, $p = .004$. Multiracial women were the most likely (46.1%), followed by monoracial minority women (31.2%), and White women were the least likely (19.5%) to dye their hair. In addition, a chi-square test of independence for women who dyed their hair found that monoracial minority women (72.7%) and (especially) multiracial women (91.7%) preferred to dye their hair any color besides blonde, whereas White women preferred to dye their hair blonde over any other color (85.7%).

A univariate ANOVA found a main effect of sex on frequency of changing one's hair color (1 = never to 7 = once per day), with women ($M = 3.02$) indicating that they dye their hair more often than men ($M = 2.11$), $F(1, 348) = 16.00$, $p < .001$.

Finally, a chi-square test of independence found that bisexual women dating women are more likely to dye their hair (100%) than bisexual women dating men (28.6%), $\chi^2(1, N = 16) = 4.75$, $p = .029$.

Videogames and Avatar Identification

Personality

Introverted gamers indicated that they play as introverted (32.4%), ambiverted (29.7%), and extroverted (37.8%) at roughly equal levels with their MMORPG avatars, whereas most extroverts (59.7%) indicated that their play behavior is extroverted, with very few playing as introverts (11.3%), $\chi^2(2, N = 136) = 9.99$, $p = .007$. Moreover, introverts are more likely to play as extroverts than extroverts are to play as introverts.

Skin Tone

Minority MMORPG gamers tended to create avatars with a lighter skin tone than their own (72.5%) whereas White gamers tended to create avatars with a darker skin tone than their own, (81.8%), $\chi^2(1, N = 80) = 12.29$, $p < .001$. In addition, an ANOVA found a main effect of skin tone on frequency of using a skin lightening filter on social media posts, $F(1, 79) = 5.53$, $p = .021$, $\eta^2 = 6.5\%$. Skin lightening filters were used more often by those who create avatars with skin tones lighter than themselves ($M = 3.23$) than by those who create avatars with skin tones darker than themselves ($M = 2.21$).

Height

Males were disproportionately more likely to report that their ideal avatar's height was taller than average when their own height was below average (90.9%) or average (100%) compared to males who were taller than average (40%), $\chi^2(4, N = 59) = 19.15, p < .001$.

Supplementary Analyses**Gamer Identity and Sex**

A chi-square test of independence found that 72.6% of females and 92.2% of males indicated being gamers, $\chi^2(1, N = 349) = 11.03, p < .001$.

PVE and PVP Gameplay Preferences

Player versus player (PVP) games permit other online players to freely attack and kill other players in the open world, often with no mechanic to take into consideration whether the interaction was consensual. Player versus environment (PVE) games do not permit this while roaming in the open world, though it is possible in some cases if the two gamers consensually agree to a duel. As such, we figured that women would be less open to non-consensual aggression (PVP) than men.

Indeed, a chi-square test of independence found that women prefer PVE games/gameplay (55.3%) whereas men prefer PVP games/gameplay (70.4%), $\chi^2(1, N = 168) = 9.67, p = .002$.

Gender-Swapping

Taylor (Taylor, 2007) concluded that the male character as the protagonist is just an empty shell, which helps the players easily fit themselves into the character, whereas the female characters can be complicated with emotions and personalities. Indeed, in female oriented games, "players are identifying with the female avatar and socializing romantically with the game characters" (Kim, 2009, p.184). As such, we decided to assess the prevalence of gender-swapping among women and men.

An analysis that combined data from this study and a subsequent one with the identical variable assessing the sex of people's videogame avatars found that men are more likely to genderswap and play online videogames as women (10.2%) than women are to genderswap and play with male avatars (9%), $\chi^2(1, N = 460) = 278.80, p < .001$.

Sexuality and Self-Esteem

A univariate ANOVA found a main effect of sexuality on self-esteem, $F(2, 331) = 8.32, p < .001, \eta^2 = 4.8\%$. Bonferroni comparisons found that self-esteem scores for bisexuals ($M = -1.51, SE = .11$) was significantly lower than heterosexuals ($M = 4.88, SE = .11, p < .001$), but neither group differed from lesbian/gay individuals ($M = 5.63, SE = 3.27$). Note, there were only 8 lesbian/gay individuals in this analysis.

Discussion

The current study investigated individuals' online/virtual presentation of self and behavior in comparison to their offline/corporeal self and behavior. Cyberspace is now a familiar venue for people to meet and foster meaningful relationships (Steinkuehler *et al.*, 2006). Thus, the online context offers a satisfactory facsimile of social connection to satiate needs for belongingness. People who struggle to make social connections in face-to-face interactions will present themselves in socially utilitarian ways in social networks to enhance their interpersonal lives via online relationships (Schouten *et al.*, 2007). For instance, people may make ideally attractive avatars as they are more likely to be sought as friends by other avatars/gamers (Fong *et al.*, 2015). Our results lend support to this general prediction as participants reported presenting themselves in socially utilitarian ways in both real and virtual settings.

Emojis and Sex

Our results support research suggesting that women use emojis more frequently than men as we found that women use emojis more frequently in texts and emails. This is consistent with gender socialization as society expects women to appear attractive and display warmth in social interactions (Ashton-James *et al.*, 2019); (Zhang *et al.*, 2021). A big part of the experience is smiling and laughing. Even when not using a smiling emoji, there is strong evidence that women smile more than men (LaFrance *et al.*, 2003). According to the literature, facial expressions are understood as carriers of an individual's information and personality characteristics. Indeed, (McDuff *et al.*, 2017) investigation of sex differences in facial expressions found that smiling behavior showed the most variability, with women smiling substantially more and for longer durations than men. In short,

interaction patterns on social media may reinforce gender role socialization of emotion.

Punctuation and Sex

Our findings are consistent with decades of research finding that women report using significantly more exclamation points than men, and men are more likely to report that they generally do not use exclamation points in their digital interactions (Scates, 1981); (Rubin *et al.*, 1992); (Herring, 1994); (Winn *et al.*, 2001); (Colley *et al.*, 2002); (Waseleski, 2006). We also found that white women are more likely to use more exclamation points on the note of punctuation. In contrast, minority women report using either exclamation points or a balance of emojis with exclamation points.

One of the most persistent gender stereotypes in Western cultures is that women are more emotional than men (Shields, 2007). Gender socialization theorists argue that women have been socialized to be more emotionally expressive, whereas males have been reinforced for withholding emotions aligned with vulnerability (Puzio *et al.*, 2022). Parents are more likely to educate their daughters than to educate their sons on how to deal with other people's emotional states. As such, people are significantly more likely to seek out straight and gay women for emotional support and least likely to seek out straight men (Willis, 2014).

One reason for this may be that women do not want to be perceived as cold. Women may feel pressure to apply a layer of friendliness when communicating with others. The absence of exclamation in a woman's message is sometimes perceived as cold or mean, whereas a man's equal reply is simply him performing his function. Although men are often praised for making others comfortable and happy, society often does not teach them to do it as though it were their job. Indeed, males are socialized in childhood to hide their feelings, to avoid showing any weakness, to avoid speaking up about how they feel, and to keep their emotions to themselves (Chu, 2014); (Puzio *et al.*, 2022). In line with this consideration, (Tannen, 1996) found that women more readily apologize because they are more concerned than men about being courteous to others.

Punctuation and Race

We also considered intersectional factors when we examined the gender gap in punctuation. For example, Black American men have historically been depicted as aggressive and many adjust various aspects of their behaviors to reduce the risk of being associated with that stereotype. For example, Black consumers have developed strategies to help mitigate the risk of being accused of shoplifting, such as being less likely to shop with reusable tote bags (Wood, 2017), and being more likely to ask for receipts (Homonoff, 2018). In a similar vein, men from ethnoracial minority groups may avoid using exclamatory punctuation to avoid activating schemas related to aggression.

We found that White women are more likely to use more exclamation points, whereas minority women report using either a good amount of exclamation points or a balance of emojis with exclamation points. This suggests that some emotions are more acceptable when expressed by certain ethnoracial groups relative to others (or at least the members of those groups perceive that to be the case). For some minority women, including exclamatory punctuation may increase threat stereotyping. Research on the implicit prejudices that women of color encounter in STEM found that when a Latina asserts herself or "behaves in ways that do not fit norms of femininity" she "triggers a racial stereotype [that she is] hot-blooded, irrational, crazy, [or] too emotional" (Williams *et al.*, 2015). In addition, 60% of Latinas reported that expressing anger or being disrespectful resulted in repercussions. In comparison, Asian women reported facing prejudices that are largely associated with the stereotype of being suspicious and untrustworthy, and "Black women often feel like they cannot make a single mistake" (Williams *et al.*, 2014). Taken together, our finding that White women report using more exclamation points whereas minority women report using either exclamation points or a balance of emojis with exclamation points is consistent with research suggesting that White women can "get away" with perceived dramatic behavior more often.

Filters, Sex and Skin Tone

Consistent with previous research (Dhir *et al.*, 2016); (Elias *et al.*, 2017); (Varghese, 2017), we found that

women are more likely to use skin-lightening filters than men when posting on social media. This is consistent with research suggesting that women attend more to their appearance than men (Bhogal *et al.*, 2016); (Uss *et al.*, 2020); (Krems *et al.*, 2020); (Kulesza *et al.*, 2014); (Netchaeva *et al.*, 2016); (Parrett, 2015).

Applying a skin lightening filter in predominantly White virtual spaces is a socially utilitarian strategy insofar as an individual may believe that their skin lightening filter use would improve their social capital. Indeed, the only participants who reported employing emojis or filters to make themselves appear darker were those with the lightest skin tone gradient. Moreover, the finding that this was stronger for women than men reflects societal valuation of lighter skin tones for women. As such, normative social considerations may encourage people, particularly women, to modify the skin tone of their selfies, bitmojis, avatars, etc in an effort to optimize socially utilitarian payoffs. This is troubling as studies have shown that the use of skin-lightening filters can contribute to the promotion of harmful beauty standards, reinforce harmful cultural attitudes toward skin color, and contribute to the development of lower self-esteem and a negative body image (Jha *et al.*, 2009); (Sahay *et al.*, 1997); (Varghese, 2017).

These results are not surprising given that existing social media algorithms exhibit biases in their default content and search results. For example, (Holder, 2020) found that the algorithm for Instagram's Explore page offered more photos of women (64.32%) than of men (26.49%). Moreover, the overwhelming portion of photos (85.16%) consisted of White individuals - a proportion inconsistent with the corporeal world given that East Asians are the most populous group in the world. Importantly, virtual algorithms serve as reflections of the collective mind, making the virtual public square of social media one of the largest marketplace of ideas ever created. As such, algorithms often function to reproduce/reflect what people search for, LIKE, comment on, view/watch, add to their wish list/ shopping cart, etc. In short, it will be difficult to overcome the negative effects of social media on body image and what people value given that we are largely contributing to it ourselves.

Hair Color

We found patterns for hair color consistent with socially utilitarian strategies. We found that Multiracial women dye their hair more than anyone, naturally blonde women were the least likely to dye their hair, and most non-blonde women dyed their hair a lighter color than their natural hair color (but mostly not blonde).

The purpose of hair color is purely aesthetic; it serves no functional purpose, yet people dye their hair all the time. According to several other studies, women with blonde hair tend to earn more than females with other hair colors. For example, "Blonde women receive a wage premium equivalent in size to the return for an extra year of schooling, and their spouse's wages are around 6% higher than the wages of other spouses" (Wang *et al.*, 2017). Heather Utt *et al.* (2012) found that blonde women are approached more by men than brunettes or redheads, though men rated brunettes as more attractive.

For non-blonde women, the socially utilitarian payoff of blonde hair applies whether she wears a wig or dyes it blonde. Indeed, a pair of studies by (Gueguen, 2012) found that waitresses wearing blond wigs received more tips (but only with male patrons), and found (2009) that hitchhiking women wearing blonde wigs were significantly more likely to have a male driver give them a ride than women with black or brown wigs. Hair color made no difference if the driver was a woman (one may reason that it would make a difference with a lesbian or bisexual female driver, though it is difficult to code driver's sexuality in a field study). In addition, Jian & Galm (Jian *et al.*, 2014) found that non-blonde White women earn significantly more tips after dyeing their hair blonde in real-world work settings. In short, it is not surprising that many female subjects reported dyeing their hair blonde, and that naturally blonde women were the least motivated to dye their hair. The finding the Multiracial women dye their hair more than anyone may be associated with aspects associated with Multiracial identity development, though this will need to be explored more directly in future research.

Self-Esteem

We found that self-esteem scores for bisexuals were significantly lower than those for heterosexuals. Bisexuals experience more challenges when coming out than lesbian/gay individuals (Pistella *et al.*, 2016), and thus are less likely to come out to family (Hayfield *et al.*, 2013); (Koh *et al.*, 2006); (Knous, 2006); (Rosario *et al.*, 2001); (Wandrey *et al.*, 2015), and to the lesbian/gay community (Costa *et al.*, 2013); (Roberts *et al.*, 2015); (Smalley *et al.*, 2015); (Wandrey *et al.*, 2015). This is partially due to biphobic stereotypes associated with infidelity and/or an inability to be monogamous (Eliason, 2000).

Code-Switching

Finally, we found several patterns associated with code-switching and race. Specifically, we found that Mixed (63.2%), East Asian (57.9%), and Hispanic students (49.3%) are far more likely to code-switch their behavior/speech when with people they know compared to Indian (37%) and White students (31.3%).

The study's findings show that members in this medium do, in fact, code-switch, and they do it in a variety of ways. Conforming, whether intentional or not, could entail adopting an image that is more "congruent" with the settings, more likable or relatable, and hence more likely to succeed.

Doing Gender in Online Videogames

Consistent with previous investigations, we found that men are more likely to play as women than women are to play as men (Ducheneaut *et al.*, 2006); (Isaksson, 2012); (Martey *et al.*, 2014); (Willis, 2021); (Yee, 2011). There are numerous reasons for this and they all reflect the notion that playing as a woman in an MMORPG game is the equivalent of playing on easy mode. For instance, female avatars (identifiable in both appearance and name) receive the most attention from other gamers, especially male avatars, are more likely to receive assistance with quests/challenges (Boler, 2007); (Hussain *et al.*, 2008); (Huh *et al.*, 2010), are more likely to be romantically courted, hit on, and given gifts by male avatars (Eklund, 2011); (Linderoth *et al.*, 2014); (MacCallum, 2008); (McMenomy, 2011); (Yee, 2008); (Zhang *et al.*, 2018), male avatars are more prosocial towards female avatars (Griffiths *et al.*, 2004); (Wang *et al.*, 2008), female avatars receive more in-game friend requests (Lou *et al.*, 2013), and they are

less likely to be targeted/ attacked by other gamers (Hussain *et al.*, 2008); (Huh *et al.*, 2010). Indeed, a study on help seeking in online videogames found that "when help is sought, females are more likely to be helped than males" (Lehdonvirta *et al.*, 2012, p. 32). Interestingly, male gamers seem to be aware of this given that men playing with female avatars are more likely to request help than men playing with male avatars.

Interestingly, we also found that women prefer to play PVE games and are less interested than men in PVP games in which non-consensual duels/fights with other players may take place. The basis for this difference will have to be explored in future research as it is not clear whether women consider such actions to be harassment or distractions that may come at the cost of time (e.g., the time to reload and/or return to what one was doing if their avatar is killed by another player).

Avatar Skin Tone in Online Videogames

In line with previous research (Lee, 2014), we found that minority MMORPG gamers tended to create avatars with a lighter skin tone than their own whereas White gamers tended to create avatars with a darker skin tone than their own. In short, it seems videogames have become a space where individuals who feel they have lower ethnoracial status in the real world participate by passively (though maybe unintentionally) concealing their true ethnoracial identity, or are actively acting on a desire to experience a world in which they inhabit a body that society values.

Future research should consider (1) if gamers play with a character of a different ethnoracial background and/or skin tone more in online games than in off-line games where the absence of other players means there is no social capital to gain/lose by making an avatar whose apparent ethnoracial identity is higher on the social hierarchy of racial preferences, (2) are Multiracial gamers more likely to create a character that resembles the ethnoracial background of the parent that they feel society values more, will they show a pattern of hypodescent, or will they create an avatar that they feel reflects all of their backgrounds, and (3) which gamers are most likely to play as non-humans (e.g., orcs, catpeople) and avoid human racial choice altogether.

Avatar Personality in Online Videogames

In perhaps one of the clearest instances of social utilitarianism, we found that, in MMORPG contexts, introverts are three times more likely to play as extroverts as extroverts are to play as introverts. Indeed, only ~11% of extroverts indicated playing in an introverted manner. Introverts likely engage in an extroverted manner because doing so provides more rewards in the online MMORPG space.

A study by (Reer *et al.*, 2017), investigated social capital in the popular role-playing game called World of Warcraft, and revealed that extraverted players had a higher level of self-disclosure and communication, participated in team play more frequently, and had a better probability of developing their social capital than introverts. However, at least some of the introverted players sought social compensation through the game, as well. Introverted players made the decision to play in a more social way, which improved their prospects of gaining social capital. The findings show that there are highly complex and indirect rather than direct relationships between personality traits and social outcomes of playing.

Avatar Height in Online Videogames

Another finding consistent with social utilitarianism was the reported ideal (or actual) height of videogame avatars based on their corporeal height and sex. Men who indicated being at and below the average height for men preferred creating taller avatars whereas men above average height did not indicate a preference to create substantially taller avatars. Though not significant, women who indicated being taller than the average height for women were the least likely to indicate a preference for creating taller avatars and most likely to indicate a preference for creating shorter avatars, whereas women who were below the average height for women were the most likely to indicate a preference for creating taller avatars.

Stated differently, the ideal height of women's and men's avatars was consistent with heteronormative mate preferences for height in which the boyfriend/husband is taller than the girlfriend/wife (Buunk *et al.*, 2019); (Courtiol *et al.*, 2010); (Griffiths, 2017); (Jonason *et al.*, 2013); (Kurzban *et al.*, 2005); (Pawlowski, 2003); (Pierce, 1996); (Salska *et al.*, 2008); (Skrimda *et al.*, 2014); (Sorokowski *et al.*,

2015); (Stephen *et al.*, 2014); (Taduran, 2021); (Valentova *et al.*, 2014); (Wood *et al.*, 2014); (Yancey *et al.*, 2014). It is also consistent with the species-level norm that men are taller than women (on average) in every human population (Eveleth, 1975); (Mark, 2014); (Wall-Scheffler, 2012).

Taken together, many participants' avatar creation and customization intentions suggest that they utilize their avatar as an extension of their utopian self: a version of themselves that may be difficult, impractical, or highly improbable to achieve in the real world (Szolin *et al.*, 2023). This is particularly true for avatar customizations associated with height and skin tone, and ethnoracial identity more broadly (e.g., it is highly improbable that an individual born to a mother from Seoul South Korea and a father from Jeju Island South Korea will proceed to live their life as someone who is half Cherokee Indian and half Guatemalan). Introverts' performativity of extroversion is something that may be more difficult in the real world. Indeed, we would not anticipate that introverted gamers who perform extroversion in online games will start going to Coachella or hosting raves in their spare time.

Limitations of the Study

A fundamental limitation of our study was the lack of male participants. An insufficient sample of male participants prohibits a more informative interpretation of male identity concerning the online video game world. Further, we did not address how others in real life and the apparent world may understand the participant's identity but focus mainly on their understanding of their own identity. It is also possible that people would change their gaming avatar to a greater degree due to it being a virtual setting instead of a social media setting.

Furthermore, though our study assessed some of the strategies individuals pursue to achieve their self-presentation goals, we did not assess individuals' perception of the relative utility of those strategies. Indeed, some individuals may be more likely than others to enact multiple strategies based on the default (or baseline) social capital bonuses or deficits they feel that they embody (e.g., dyeing one's hair blonde may sufficiently increase how one individual feels they are socially perceived, but someone who feels they are less privileged in default social perception may feel that they should

wear blue or green colored contact lenses as well). In addition, the consequentiality of any perceived default social valuation or devaluation will differ based on the importance individuals place on how they are perceived in specific contexts. Measuring individuals' assessment of the signaling utility of various self-presentation strategies may prove insightful in future investigations.

Furthermore, did not ask about individuals' outness status among LGBTQIA+ participants. This may be relevant to the findings for self-esteem given that out lesbian, gay, and bisexual individuals report higher self-esteem than those in the closet (Feldman *et al.*, 2013) ; (Whitman *et al.*, 2015). It would also be insightful to assess how monoracials in interracial relationships navigate the process of disclosing their relationship to their parents, the strategies those in interfaith relationships use when disclosing to their parents, and the self-presentational and/or disclosure strategies used by individuals who have changed their faith and have yet to come out to their parents.

Conclusions

Our study focused on the utilitarian adaptations individuals make to their online identity under a utilitarian framework. Future research could

assess cultural appropriation, affiliation, and appreciation and how each relates to identity negotiation decisions (Chew, 2021). In addition, future research could assess the degree to which people will use a virtual avatar or social media account as a vehicle for intercultural identity formation (Handapangoda, 2015). Finally, future studies could assess the degree to which videogame players design avatars that parallel themselves, experiment with alternative selves, and/or if players take the opportunity that videogames offer to deconstruct certain cultural narratives.

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Conflict of Interest

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