Is it a game? Evidence for social influence in the virtual world

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Online virtual worlds promise an escape from mundane everyday environments and exempt users from the normal laws of time, space, and gravity. However, the laws of social influence may not be as easily dodged. In the virtual world of There.com we tested two robust real-world compliance tactics (foot-in-the-door, door-in-the-face) with avatar ''race'' as a moderator. Results revealed success for both techniques, suggesting that avatars are sensitive to influence tactics targeting both self-perception and reciprocity norms. Additionally, the race of the avatar requesting help impacted the success of the door-in-the-face compliance technique, raising the specter that real-world racial biases may also emerge in virtual environments.

> ''Yes, it's just a game … the way that the real world is a game.''
> Joi Ito, quoted in *Newsweek*, September 2006

The quote above comes from a user of World of Warcraft, a popular Massively-Multiplayer Online Game (or MMOG), when he was interviewed for a recent *Newsweek* magazine article (titled ''Is it a game?''). A far cry from the two-player console games of ages past, MMOGs and other nongame-oriented online virtual worlds (e.g., Second Life, There.com) allow

tens, hundreds, or even thousands of online users to interact simultaneously in complex, subtle, and increasingly realistic ways. Online virtual worlds come in many different formats, but all share common features such as user-created *avatars*, the cartoon-like characters that inhabit virtual environments and represent the user, as well as elaborate and often surreal landscapes (e.g., outer space, dragon lairs, floating cloud islands). An interesting yet underexplored question concerns the psychological nature of avatar-to-avatar interactions that take place in the virtual world: Are they experienced as part of a game or as authentic social contact?

There is an escapism inherent to virtual worlds (Yee, 2006): The ability to step outside the mundane real world, even temporarily, is certainly part of the appeal. Indeed, there are many reasons to view engagement in the virtual world as mere play: the cartoon-like third-person perspective, the strong fantasy elements in the environment, and the frequent breaking of the normal laws of time, space, and gravity (teleportation as well as flying are common forms of transportation in avatar life). For these reasons, the online virtual world could be an environment in which commonplace social psychological phenomena, such as susceptibility to social influence tactics and expression of appearance-based prejudices, are diminished. After all, virtual worlds often enable the user to customize their virtual avatar's appearance; real-world intergroup biases may find little foothold in such a fantasyland. Then again, social interactions among avatars remain core features of the virtual-world experience. If the virtual world is a compelling real-world social analog (Miller, 2007), the possibility remains that users will inadvertently import the entirety of their social psyche into their avatar, biases and all.

SOCIAL SCIENCE AND VIRTUAL ENVIRONMENTS

Economists were among the first social scientists to systematically explore online virtual worlds (e.g., Castronova, 2004), and communication scholars soon followed. Some of the best research to date has been carried out by Yee (2006, 2007): In his large-scale surveys of MMOG users, Yee has identified several independent motivations that underlie users' MMOG participation (e.g., achievement, immersion). In addition, these surveys have found that many users form social relationships in these environments that are just as meaningful as their real-life relationships. Furthermore, in a clever observational study, Yee and colleagues assessed the body posture and eye gaze of Second Life users (Yee, Bailenson, Urbanek, Chang, & Merget, 2007). Results revealed that, just as in real life, male–male dyads maintained larger interpersonal distances and were less likely to look directly at one another compared to female–female dyads. Although social psychologists have yet to begin systematic

field research or experimentation within virtual environments, these initial studies certainly suggest that the social aspects of online virtual worlds may indeed have real-life parallels.

Within the social psychological realm other relevant work has been carried out by Blascovich, Bailenson, and colleagues, who have turned to Immersive Virtual Environments (IVEs) to study psychological phenomena (see Blascovich et al., 2002). A technological step beyond standard online virtual worlds, an IVE surrounds a participant with synthetic sensory information, creating the compelling illusion that one is actually inhabiting a virtual "reality." This technique enables researchers to maximize both experimental control and mundane realism, two desirable properties of any research study that are often inversely related (Blascovich et al., 2002). Several IVE studies have found that avatars in these virtual environments tend to elicit realistic responses from participants. For example, participants in IVEs tended to maintain appropriate interpersonal distances from other avatars (Bailenson, Blascovich, Beall, & Loomis, 2000), especially when the avatar was looking at them, or participants believed it to be another human being (Bailenson, Blascovich, Beall, & Loomis, 2003). Bailenson and Yee (2005) found that avatars in an IVE who mimicked a participant's head movements were judged by that participant to be more persuasive and more likeable (see Chartrand & Bargh, 1999). In addition, a recent IVE replication of the classic Milgram (1963) obedience study managed to elicit true distress reactions from participants (Slater et al., 2006). Participants' behavior in IVEs is also influenced by their own avatar's appearance. For example, participants who were assigned an attractive avatar disclosed more about themselves compared to unattractive avatars, and participants who were assigned a taller avatar behaved more confidently in a negotiation task compared to shorter avatars (Yee & Bailenson, 2007). In general, participants appear to react to virtual avatars much as they would to a real-life individual, and their own behavior may even reflect the appearance of their avatar.

The pioneering research of Blascovich, Bailenson, and colleagues demonstrates that participants' basic social mechanics remain intact in IVEs. However, we were eager to explore whether social cognitive processes have immediate relevance within the impoverished sensory environment and less realistic setting of the online virtual world. Therefore the present study sought to demonstrate the effectiveness of two social influence classics, the foot-in-the-door effect (Freedman & Fraser, 1966) and the door-in-the-face effect (Cialdini et al., 1975), in the virtual world of There.com. In addition, we suspected that users would continue to display unfortunate societal biases brought in from the "real world," and so we also explored whether compliance would differ depending on the skin-color of the avatar making the compliance request.

THE FOOT-IN-THE-DOOR EFFECT

The desire to behave in ways that are consistent with one's perceptions of the self is thought to be a powerful human motive (Lecky, 1945; Swann, 1983). Indeed, this desire is often so strong that it may be persuasively employed to alter behavior (e.g., Aronson, 1992; Cialdini, 2001; Stone, Aronson, Crain, Winslow & Fried, 1994). One memorable illustration of this motive is revealed by a classic influence tactic called the foot-in-the-door (FITD) technique (Freedman & Fraser, 1966). In FITD, a requester first presents a participant with an extremely small request that is almost certain to be agreed to. Then a larger request is made of the participant; this request is more likely to be met with compliance than if it had been presented in the absence of the extremely small request. The effectiveness of FITD has typically been explained by invoking self-perception theory (Bem, 1972). If the initial small request enables the participant to affirm or ascribe the trait of helpfulness to the self, he or she will be more likely to exhibit the helpful behavior of complying with the second request (Uranowitz, 1975).

Compliance with the FITD technique thus fundamentally involves the self. As further evidence, features of the requester (e.g., credibility, likeability) have very little to do with the compliance induced by FITD (Patch, 1986; Williams & Williams, 1989). In fact, FITD is renowned for its continued effectiveness even (a) when the second requester is a different person (Freedman & Fraser, 1966), (b) after a substantial delay (Freedman & Fraser, 1966), and (c) without the need to meet the requester face-to-face (Guéguen, 2002; Guéguen & Jacob, 2001). In addition, the compliance induced by FITD is moderated by the extent to which participants feel the need to behave consistently; individuals demonstrating a low preference for consistency have proven less likely to succumb to the FITD technique (Cialdini, Trost, & Newsom, 1995; Guadagno, Asher, Demaine, & Cialdini, 2001).

Given that the effectiveness of the FITD technique rests on altering the target's self-view, to the extent avatars are merely played rather than inhabited, FITD should be relatively ineffective. In fact, researchers studying the phenomenon of *cyberdisinhibition* (the increase in inappropriate or uncharacteristic behavior online) posit that certain factors inherent in all forms of online interaction, such as relative anonymity and invisibility, allow for a disconnect between online behavior and the actual self (Suler, 2004). These factors may encourage thinking of online behavior as a game ungoverned by one's normal values or standards. Certainly, to the extent that the avatar is merely a character in a game, an avatar's actions needn't change a user's self-view. On the other hand, to the extent users are psychologically inhabiting their avatars, the avatar and the user should not be dissociated, and FITD should remain effective in the virtual world.

THE DOOR-IN-THE-FACE EFFECT

Finally, if virtual environments offer a genuine social experience, users may unwittingly import and apply social, appearance-based constructs from the real world. Of course, we are not arguing that another's physical characteristics (e.g., race, gender, physical attractiveness) should guide one's judgments in the real world, but there is little doubt that they do. Some have argued that stereotypes based on social categories simplify processing, and thus are cognitively adaptive responses to relevant patterns in the environment, whether these patterns are due to societal differences in social roles, power, or opportunity (Ashton & Esses, 1999; Eagly & Steffen, 1984; Lee, Jussim, & McCauley, 1995). It should be recognized, though, that however little use racial or gender stereotypes may be in the real world, they hold even less utility in an environment where every aspect of appearance can in principle be tailored and changed at will. Indeed, one unique aspect of virtual worlds is that appearance is very customizable and easily altered, and this feature should be salient to the user, given they have chosen their own avatar's appearance.

One potential way to examine the influence of appearance stereotypes would be to use the door-in-the-face (DITF) technique (Cialdini et al., 1975). An individual employing this technique presents a participant with an extremely large request that is almost certain to be declined. Then a more modest request is made of the participant; this request is more likely to be met with compliance than if it had been presented in the absence of the extremely large request. Like the foot-in-the-door (FITD) technique, DITF is also considered a "sequential request" compliance technique. However, one fascinating aspect of FITD and DITF is that, despite having identical outcomes (increased compliance to the second request), they appear to work for very different reasons. As noted above, the effectiveness of FITD rests on self-perception and consistency. The effectiveness of DITF, on the other hand, is better explained as an illustration of the norm of reciprocity (e.g., Cialdini & Goldstein, 2004; Cialdini et al., 1975). Participants are more likely to comply with the second request because they perceive that the requester has made a concession; so long as the requester's concession is plausibly genuine, the participant will be more likely to make his or her own concession by moving to a position of compliance. In essence, DITF is primarily an *affiliative* phenomenon (Cialdini & Goldstein, 2004): Participants agree to the second request because they feel some measure of obligation to help the requester.

As FITD is a self-perception phenomenon that concerns only the self, whereas DITF is an affiliative phenomenon that hinges on one's relationship with the requester, characteristics of the requester should impact DITF but not FITD compliance. A number of studies have confirmed this hypothesis. For example, Patch (1986) investigated the impact of source legitimacy on compliance by manipulating whether requesters in the FITD, DITF, and control conditions

claimed to be either from a public interest group (high legitimacy) or a private consulting firm (low legitimacy). The FITD technique was effective at increasing compliance regardless of legitimacy, whereas the DITF technique was effective only for participants exposed to the high-legitimacy requester. Likewise, Williams and Williams (1989) found that participants were more likely to donate to a zoo when approached by a requester wearing a suit versus casual clothing in the DITF condition. However, clothing had no impact on donations in either the control or FITD condition. These results are sensible considering the affiliative, externally oriented motivation inherent to DITF: Reciprocation concerns dictate how a participant should respond, and these concerns should be moderated by the characteristics of the requester (such as attractiveness or race). As such, DITF presents a suitable paradigm for examining stereotypes in either the real or the virtual world.

THE CURRENT STUDY

This report explores the effectiveness of social influence tactics within the virtual world. First we sought to replicate the foot-in-the-door effect (Freedman & Fraser, 1966) in the virtual world, thereby demonstrating that individuals retain a need to behave consistently, even when it is one's avatar that is performing the behaviors. In the same study we also investigated the door-in-the-face effect (Cialdini et al., 1975) and hypothesized that reciprocity concerns would indeed impact participants' behavior. In addition, given that the door-in-the-face effect (but not the foot-in-the-door effect) is affected by liking for and perceived legitimacy of the requester, we hypothesized that real-world social biases would seep into the virtual world and decrease DITF (but not FITD) compliance when the requesting avatar possessed a dark skin tone.

This study was conducted in the virtual world of There.com. There.com is a relatively unstructured online virtual world that boasted 17,000 users by early 2005 (Woodcock, 2006); it brands itself as an online getaway where users can hang out with friends and explore an immense and unusual landscape. There.com possesses an appealing and inherent surreality—a world in which individuals can change appearance at will, teleport instantly to glowing crystal canyons or starlit desert landscapes, and purchase colorful jetpacks or sky surfboards to fly within floating cities in the clouds. Despite the clearly ''unreal'' nature of this virtual world, we expected to find that There.com users would nonetheless succumb to very down-to-earth effects of social influence.

Method

Participants. Participants were 416 users in There.com sampled at varying times of day. Much like a real-world field study, the Institutional Review

Board granted a waiver of formal consent because of our need to assess participants' behavior quickly and without alerting them to the fact that we were conducting a psychological study. Thus, due to the brief nature of the experimental interaction, the experimenter did not request age or demographic information from participants. However, in 2004, 44% of There.com users were women, and 55% of users were over the age of 26 (Electronic Gaming Business, 2004). More recent demographic data exist for other similar social virtual worlds: ''Second Life'' is a close analogue of There.com in that it is an unstructured world (i.e., not dominated by specific quests) with roughly 25,000 users who log on each day. Of the users in Second Life, 43% are women, and the average age is 32 (Walsh, 2006).

Procedure. The experimenter approached There.com users whose avatars were standing alone in one of the main gathering areas. In all conditions, the experimenter's avatar initiated the interaction by saying: ''Hi, I'm doing a photo scavenger hunt.'' In the Control condition ($N=218$), the experimenter then made the moderate request: ''Would you teleport to Duda Beach with me and let me take a screenshot of you?'' In the FITD condition ($N=97$), participants preceded the moderate request with a small request: ''Can I take a screenshot of you? ☺''.[1] In the DITF condition ($N=101$), participants preceded the moderate request with a large request: ''I need to take a screenshot of someone in 50 different locations. It's supposed to take about 2 hours of teleporting and traveling. Would you do it? ☺''.[2] If participants declined the moderate request, the experimenter thanked them and left. If participants agreed to the moderate request, the experimenter teleported to Duda Beach, took a screenshot of the participant, thanked them, and left.

For half of the trials ($N=206$) the experimenter was logged in as light-skinned avatar Josh7899, whereas for the other half of the trials ($N=210$) the experimenter was logged in as dark-skinned avatar Mike1111.[3] The light-skinned avatar's skin color was the whitest possible setting (''milk'') whereas the dark-skinned avatar's skin color was the darkest possible setting (''espresso''). In addition, Mike1111's facial features were altered slightly by

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[1] The ☺ symbol indicates that the avatar smiles at this point in the request.

[2] An additional 22 participants in the FITD condition (surprisingly) declined the small request and an additional 21 participants in the DITF condition (surprisingly) agreed to the large request. Also, 18 participants in the DITF condition declined the large request but teleported or exited before the experimenter could make the moderate request. These participants were not included in the total N reported above.

[3] The experimenter used two different avatars to guard against errors that could be caused by repeatedly changing the appearance settings of a single avatar. To select the avatar names, we consulted a database of names and selected two that were approximately equally common.
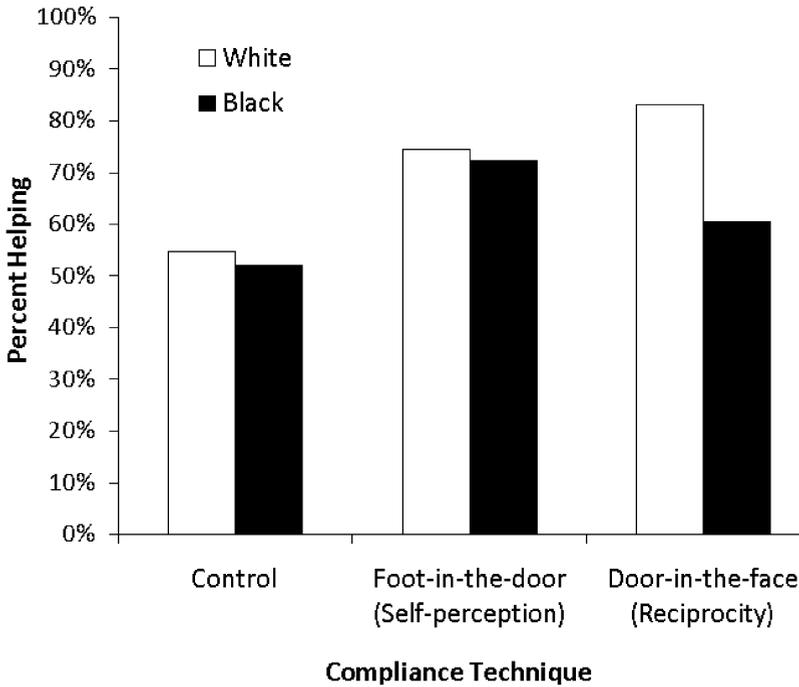
Figure 1. Percentage of participants complying with the moderate request as a function of compliance technique and skin-tone of the requesting avatar.

the experimenter to make him look more African-American.[4] Otherwise, the two avatars were identical; they had the same body structure and wore only the clothing given to brand new There.com users (see Appendix). Importantly, neither skin tone is one of the three possible default settings for There.com avatars (which are intermediate in color); thus both represented minority skin tones in the virtual world.

Results

The percentage of participants who complied with the moderate (Duda Beach) request is presented separately by condition and skin tone in

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[4] Afrocentric facial features have also been linked to automatic bias. In an examination of prison sentencing (Blair, Judd, & Chapleau, 2004), the extent of Afrocentric features (darker skin tone and prototypic African American facial features) was found to be a significant predictor of sentence duration—in both white and Black Americans. Individuals with more Afrocentric features received more severe prison sentences for the same level of crime. The dark-skinned avatar was created to carry a high level of Afrocentric features—including facial features as well as darker skin tone.

Figure 1. Logistic regression was used to predict participants' compliance (Yes vs. No) as a function of compliance technique (Control vs. FITD vs. DITF) and skin tone (light vs. dark) of requesting avatar. The overall regression revealed a significant main effect of compliance technique, *Wald* X^2=13.83, p=.001, and a non-significant main effect of skin tone, $B=-0.11$, *Wald* X^2=0.16, p=.690.

To explore the effectiveness of the FITD condition specifically, we analyzed the Control and FITD conditions alone. Averaged across light- and dark-skinned avatars, FITD was effective compared to the Control condition, B=0.88, e^B=2.40, *Wald* X^2=10.81, p=.001. That is, the virtual-world participants were susceptible to the foot-in-the-door compliance technique on average. When light- and dark-skinned avatars were analyzed separately, FITD proved effective at increasing compliance for both the light-skinned avatar, B=.89, e^B=2.42, *Wald* X^2=4.94, p=.026, and the dark-skinned avatar, B=.88, e^B=2.41, *Wald* X^2=6.00, p=.014. Indeed, the compliance technique $\times$ race interaction was non-significant, B=.00, *Wald* X^2=0.00, p=.994.

To explore the effectiveness of the DITF condition specifically, we then analyzed the Control and DITF conditions alone. Averaged across light- and dark-skinned avatars, DITF was effective compared to the Control condition, B=0.83, e^B=2.29, *Wald* X^2=10.15, p=.001. Thus, like the FITD effects above, the virtual-world participants were susceptible to the door-in-the-face compliance technique on average. However, DITF was effective at increasing compliance compared to the Control condition only for the light-skinned avatar, B=1.41, e^B=4.07, *Wald* X^2=11.57, p=.001, not the dark-skinned avatar, B=.35, e^B=1.42, *Wald* X^2=0.98, p=.322. As expected here, the compliance technique $\times$ race interaction emerged, $B=-1.06$, *Wald* X^2=3.78, p=.052.

DISCUSSION

Although avatars inside There.com can brush aside the laws of time, space, and gravity, they do not appear exempt from social influence. The foot-in-the-door (Freedman & Fraser, 1966) and door-in-the-face (Cialdini et al., 1975) techniques were effective in inducing compliance despite the fact that all interactions took place in a virtual environment. These findings suggest that online interaction, although it may consist of strange-looking avatars conversing against exotic backdrops, is sufficiently *socially* realistic that users succumb to factors known to influence people in the "real" world. The success of FITD addresses the importance of the self in online virtual environments; just as in the real world, brief interactions with strangers in the virtual world affected how participants saw themselves. The success of DITF suggests that There.com users were unwilling to offend a stranger's

avatar by not reciprocating the reduction in his request. However, the DITF effect proved to be less effective when the requesting avatar was dark-skinned, thus implying that reciprocity concerns took on greater importance when the requesting avatar was light-skinned. Skin color did not influence the effectiveness of FITD; unfortunately this finding does not assuage concerns about online users importing real-world biases but rather confirms previous findings that characteristics of the requester do not moderate the FITD effect (Patch, 1986; Williams & Williams, 1989). Although one's appearance is highly customizable in There.com, the unfortunate possibility exists that real-world racial biases have the potential to influence behavior in the virtual world.

Of course, it is still worthwhile to speculate about the degree to which the virtual world is truly social. After all, there is a widely held utopian impression that virtual worlds possess "few real social risks or conse-quences" (Marriott, 2003, p. G1); from where does this impression emerge? Although the present research suggests that virtual-world users are not socially indifferent on average, it could be that the anonymity that people sometimes experience online is at the source of this impression. In other words, if a user does not identify with a particular online community, and can leave it at will with no desire to return, they may behave in counter-normative ways as if their online social relationships were expendable. This hypothesis meshes well with the social psychological literature demonstrat-ing that anonymity is associated with reduced sensitivity to outgroup norms in both the real world (Diener, Fraser, Beaman, & Kelem, 1976) and online (Douglas & McGarty, 2001; see Postmes, Spears, Sakhel, & de Groot, 2001). However, most virtual-world users probably consider their chosen virtual-world community to be an ingroup and do not consider themselves to be anonymous while online. Not only do 75% of users report playing for more than 10 hours per week, but users also claim that the social relationships they cultivate online are deeply personally significant (Yee, 2006). In fact, even combat-oriented MMOGs are designed to encourage players to develop lasting relationships (e.g., guilds) in order to complete various tasks within the game. Given the vast amounts of time that many, if not most, users invest into online virtual worlds, it is highly plausible that users consider the reputation of their avatar (e.g., likable, helpful, polite) to be synonymous with their own.

Limitations and strengths

The present report has one notable limitation. Given that all There.com avatars are controlled by humans, we were unable to manipulate whether or not a human was ostensibly controlling the requesting avatar. With regard to the skin tone effect in the DITF condition, we cannot determine whether

participants were influenced by the digital avatar itself or by some attribution about the person controlling the avatar. In other words, we cannot address whether it was (a) the mere presence of the requesting avatar's dark skin that led to reduced DITF compliance, or (b) that participants instead made an attribution about the kind of user that would choose to have dark skin. We find the former explanation to be more likely given the nuances of the present findings. For one, avatar skin tone did not influence compliance in the control condition, yet presumably it would have done so if it triggered an attributional bias against a user who would choose an unusual skin tone. Moreover, because neither the light nor dark skin tone represented any of the three default skin tones in There.com, both would be seen as unusual choices. Importantly however, whether the DITF skin tone bias reflects either an automatic racial bias unfortunately imported from the real world or a thoughtful bias against users who would choose an unusually dark (but not unusually light) skin tone, both explanations undoubtedly have racist implications.

This study also has several important strengths. By demonstrating the applicability of basic social influence principles within online virtual environments, this study recommends that researchers consider such environments as potential testing grounds for new social psychological theories. In fact, by virtue of their wide range of ages and geographic locations (Walsh, 2006), virtual-world participants may prove more diverse than standard college student populations. Online virtual environments may therefore offer a compelling yet convenient new form of field research for psychologists.[5] In addition, as previous research has demonstrated that self-perception effects emerge in immersive virtual environments (Yee & Bailenson, 2007), we have extended these findings to the less physically realistic setting of the online virtual world. The present data suggest the distinct possibility that users routinely extend their social selves to inhabit their online avatars, and therefore the appearance (e.g., sex, race) and accompanying behavior of participants' avatars may have additional unexplored social significance. Finally, to our knowledge this is the first study to examine race, one of the most pervasive independent variables in social psychology, as a moderator of the classic foot-in-the-door and door-in-the-face social influence techniques. Indeed, race of the requesting avatar did moderate the DITF effect, a finding that makes theoretical sense given previous social influence research (Patch, 1986; Williams & Williams, 1989).

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[5] Of course, virtual-world (as well as standard college student) participants may be unrepresentative in that they have access to and free time to explore the internet; however, even if virtual world users are odd or unusual in certain respects, the present findings would indicate that FITD and DITF remain robust within such an odd and unusual sample.

Conclusion

We began this work hoping to address whether the increasingly popular phenomenon of virtual-world involvement represented merely a game, or something akin to real social interaction. Despite the patent unreality of most virtual environments, we trusted that the virtual-world social context alone would be sufficiently powerful to generate true social psychological effects. The present studies validated this assertion by demonstrating that social influence tactics remain effective in a virtual environment. To our knowledge, these are the first experimental tests of social influence conducted within a pre-existing online virtual world: the first experimental "virtual field studies." These findings generally underscore the recent academic call-to-arms (e.g., Bainbridge, 2007; Miller, 2007) that studying the virtual world will broaden our understanding of human behavior, both on- and offline.

Although it is undoubtedly exciting that modern technology can facilitate such realistic communication across vast distances, the virtual world may not prove to be a perfect utopian getaway from the real world. The present research raises the specter that real-world racial biases, as they are inextricably intertwined with the rest of the human social mind, may also emerge in virtual environments. However, the social power inherent in virtual worlds also implies that there is perhaps little need to worry about frequent virtual-world users spending time "alone" with their computers. Given the social power of online virtual worlds, users may well be experiencing rich social realities, including the formation of genuine relationships and strong social networks. In testament to the strength of these relationships, Terdiman (2005) reported that many There.com members paid $75 (in addition to flying to California from across the country, or in some cases from across the world) for a real-world "reunion" of friends from the virtual world. As one There.com member happily commented at this gathering: "It may be a virtual environment, but the interaction is real." Indeed.

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APPENDIX

Light-skinned (Josh7899) and dark-skinned (Mike1111) experimenter avatars. Images used with permission from There.com