

# Virtual Reality and the Metaverse Handout

## I. Introduction to Virtual Reality Technology

**Virtual reality (VR)** refers to a three-dimensional, computer-generated environment that can be explored and interacted with by a person. The individual becomes part of this virtual world or is immersed within it, enabling them to manipulate objects or perform various actions.

**A VR system can be defined by four primary components** (Pimental & Teixeira, 1995, pp. 91-92): effectors (input and output devices), a reality simulator (computer and sensory synthesis hardware), an application (software), and geometry (information within the application describing the physical attributes of objects). The technology involved in each component is expected to undergo significant advancements over the next twenty years.

**Popular contemporary VR systems** include the Oculus Quest, Sony PlayStation VR, Google Cardboard, and HTC Vive. VR experiences are becoming increasingly lifelike, trending towards indistinguishability from real life.

Virtual reality technology has a variety of applications beyond entertainment, such as:

- **Medicine:** Enables doctors to practice surgery in a risk-free virtual environment.
- **Military and Law Enforcement training:** Simulates dangerous situations for real-life preparedness. Police already use VR tools from VirTra for training.
- **Education:** Offers students virtual field trips, potentially transforming the future of education. The Unimersiv app allows users to tour Ancient Rome, board the Titanic, and more.
- **AI Safety:** Tests different AI systems in simulations to determine optimal performance without real-world consequences.
- **Virtual Manufacturing:** A simulation-based method supporting engineers in defining, simulating, and visualizing the manufacturing process in a computer environment.
- **Art:** Tilt Brush, a VR app, enables painting in virtual worlds, opening up new artistic possibilities.
- **Fashion and Design:** Virtual store simulations allow retailers to experiment with design structures before committing to one or purchasing an expensive prototype. ASOS and eBay have already invested in virtual reality shopping experiences.
- **Real Estate:** Virtual house tours, such as those offered by Matterport, enable remote viewing of properties.
- **Mental Health and Psychological Well-being:** The Guided Meditation VR app immerses users in meditative spaces to facilitate mindfulness.

prototype. Also, VR may soon allow you to virtually try on clothes while engaging in online shopping. The European retailer ASOS has already invested in virtual reality shopping and the company ebay launched the first virtual reality department store.

- **Social Media and Communication:** In the future, we may witness the emergence of virtual social media platforms. This can be viewed as a positive development, as the current two-dimensional nature of platforms like Twitter can often lead to dehumanization, misunderstandings, and bad faith interactions. We are already observing a shift in this direction with the rising popularity of shared audio spaces, such as Clubhouse. Virtual reality social media would be a natural progression from audio-based platforms. Numerous applications, such as Vtime, Oculus Rooms, and High Fidelity, are already fostering social communities within VR environments, where individuals can interact using virtual avatars as their embodied representations.

## II. Ethics of Virtual Reality

**Covid and the uptake of VR:** The COVID-19 pandemic has led to a fragmentation of society and has prompted many businesses to reevaluate the necessity of in-person interactions. As a result, we have come to understand that numerous tasks can be accomplished online. This realization could potentially drive increased adoption of VR technology as a primary means of communication. In the future, people might engage more in shared VR spaces rather than physical environments. For instance, businesses could establish virtual offices where employees connect from their homes. Physical travel may gradually decline in favor of virtual experiences. Mark Zuckerberg has stated that due to the ease of moving bits compared to atoms, Facebook is concentrating on virtual and augmented reality, enabling individuals to be physically distant while maintaining a sense of presence with others.

**Design Ethics in VR:** (1) Calculate foreseeable use versus intended use, (2) Do not wait for regulators to enforce more ethical, safer designs, (3) Full disclosure to consumers of testing that has been done related to the technology, and of the potential safety, social, and ethical risks

### **Ethical Concerns Related to VR:**

- (1) **Hacking:** Is it possible for the technology to be hacked without the user's awareness?
- (2) **User protection:** If VR headsets do not provide real-time sensory feedback, users may need physical protection to avoid collisions with walls or accidentally walking off bridges in the real world.
- (3) **Desensitization and pornographic content:** The desensitization issues associated with pornography and violent video games could be exacerbated by lifelike VR experiences. Discussion question: Will VR technology serve as an outlet for aggressive and sexual impulses, or will it intensify these impulses?

- (4) **Post-Traumatic Stress Disorder:** VR experiences can be so realistic and intense that they may trigger genuine PTSD in users, presenting the opposite concern to desensitization.
- (5) **VR as torture:** Is VR torture better, worse (in specific situations), or ethically equivalent to physical torture? In some ways, it could be more severe since VR can create forms of suffering that are impossible in the real world. For instance, a person's arm could be virtually severed and then repeatedly regenerated and severed again. The Black Mirror episodes "Black Museum" and "White Christmas" depict particularly cruel forms of suffering possible in VR spaces.
- (6) **Virtual crimes:** If we all inhabit a shared virtual space, how do we manage and adjudicate potential virtual crimes? For example, if someone stabs my avatar in virtual reality, I may experience real pain, even though I am not physically injured in the real world. How should we ethically and legally address situations where individuals experience genuine pain in a VR space without sustaining real-world bodily harm?
- (7) **User isolation and social effects:** If highly realistic virtual worlds become widely accessible, people may opt to spend their time in VR simulations rather than the real world, potentially leading to increased isolation and societal fragmentation, unless we are all communicating within virtual reality.

### **III. The Ethics of Virtual Sexual Assault**

With over 100 million active monthly users, Roblox aims to bring people together through play. Danaher recounts an incident in which a young girl's Roblox avatar was forced to engage in simulated sexual acts by two male avatars in a virtual playground. The Roblox team reacted quickly, banning the malicious user from the platform.

The Roblox incident is not the first of its kind; unwanted sexual interactions are becoming more common in digital and virtual environments, including open-ended platforms like Roblox and Facebook Spaces, as well as specific games like World of Warcraft, Drunkn Bar Fight, and QuiVR. This growing trend raises several important questions: Are these virtual interactions unethical? If so, how unethical are they compared to real-world sexual assault incidents? And if they are considered less serious, how should they be classified and understood?

**The Prevalence of Virtual Sexual Assault:** Danaher discusses the prevalence of unwanted sexual interactions in virtual environments, drawing on evidence from documented incidents and surveys. The author presents several well-known cases to highlight the widespread and diverse nature of such incidents:

1. **LambdaMoo incident:** In the early 1990s, in the text-based virtual world LambdaMoo, one character used a "Voodoo Doll" program to control the avatars of two female characters, forcing them to engage in text-based sexual interactions. One of the women was particularly traumatized by the event.

2. **Second Life rape(s):** Second Life, an open-ended virtual world popular in the early 2000s, saw numerous instances of unwanted sexual activity or virtual "rape." In 2007, Belgian police investigated an alleged rape on the platform but no charges were filed.
3. **QuiVR virtual groping:** In 2016, journalist Jordan Belamire reported being virtually groped while playing the virtual reality (VR) game QuiVR. The incident occurred in an immersive virtual environment.
4. **Altspace unwanted kissing:** In 2016, journalists Taylor Lorenz and Alexis Kleinman experienced unwanted "kisses" while using Altspace, a social VR app. Similar incidents have been reported by other users.
5. **Sexual harassment in Rec Room:** In 2017, Facebook VR researcher Michelle Cortese was subjected to sexual harassment while using the immersive VR platform Rec Room. Cortese later created a public art exhibition to showcase the potential frequency of sexual harassment in virtual spaces.

**Survey Data on Virtual Sexual Assault:** Jessica Outlaw conducted two studies on this topic. In one study, she found that fear of sexual harassment or unwanted sexual attention was a major barrier for women using VR platforms. In another study, she surveyed over 600 VR platform users and found that 49% of women and 36% of men had experienced at least one incident of sexual harassment. Users also reported other forms of harassment such as racist or homophobic comments. Similarly, Sparrow et al. (2019) found that players of online multiplayer games expected some level of abuse and harassment while playing.

**Defining and Categorizing Unwanted Virtual Sexual Interactions:** While some incidents can be identified as sexual harassment, others could be considered 'virtual sexual assault'. To avoid implying equivalency with real-world sexual assault, the term 'UDES' (unwanted, digitally enacted sexual interactions) is proposed as a more descriptive and neutral alternative. All these incidents share a key feature: the sexual interaction is performed through a virtual representation or avatar. The passage suggests classifying these incidents along different dimensions, such as:

1. **Degree of immersion:** Distinguishing between incidents involving controller-manipulated avatars and those experienced through immersive headsets, as the separation between user and virtual representation might impact the potential harm.
2. **Involvement of game environments:** Different ethical rules could apply to game-based interactions, referring to the concept of a 'magic circle' where ordinary moral rules are suspended within game settings.
3. **Perpetrator and victim identities:** The passage explores the possibility of artificial characters being victims or perpetrators of virtual sexual assault, raising questions about moral responsibility and blame attribution.

**Virtual Sexual Assault Involving Artificial Characters:** Danaher chooses to mostly exclude the complexities that emerge when artificial characters are involved as victims or perpetrators of virtual sexual assault. The reason for this exclusion is the Danaher's prior focus on the topic in earlier writings. Danaher's views can be summarized as follows:

- A. Some forms of sexual assault involving artificial characters, especially those representing children, are morally impermissible.
- B. It might be acceptable to hold the designers of artificial characters responsible for their virtual actions under specific conditions.
- C. In certain cases, there might not be a suitably culpable moral agent to hold accountable for the actions of artificial characters.

**What Makes an Action Wrong?** Danaher explores the question of what makes an action wrong and considers two common answers from deontological and consequentialist perspectives: (a) the action violates someone's rights, and/or (b) the action causes or has the potential to cause non-trivial harm to another. Using these criteria, he constructs an argument that unwanted virtual sexual interactions are a serious moral wrong.

**Argument for the Moral Wrongness of Virtual Sexual Assault:**

- P1.** If an action violates someone else's rights and/or causes (or has the potential to cause) them non-trivial harm, then that action is a serious moral wrong.
- P2.** Unwanted virtual sexual interactions violate someone's rights (specifically their right to sexual autonomy) and/or have the potential to cause them significant harm.
- C.** Therefore, unwanted virtual sexual interactions are a serious moral wrong.

**Premise 1:** The first premise, which asserts that an action is a serious moral wrong if it violates someone's rights or causes (or has the potential to cause) non-trivial harm, is considered relatively uncontroversial. It appeals to both deontological and consequentialist theories of moral wrongdoing. Danaher acknowledges the potential for debate around the concepts of 'rights' and 'harm,' but argues that the right to sexual autonomy and the physical and psychological trauma resulting from unwanted sexual interactions fall within the paradigmatic range of cases. Danaher includes the potential to cause non-trivial harm as part of the first premise to account for the variable harm different people may experience and the impossibility of predicting the exact harm caused in every case. This allows for reasonable estimates of the likely harmfulness of actions.

**Premise 2:** The second premise, which claims that unwanted virtual sexual interactions violate someone's rights (specifically, their right to sexual autonomy) and/or have the potential to cause significant harm, may be more controversial. However, Danaher argues that there is a strong prima facie case for it. First, the discussed examples of unwanted sexual interactions seem to involve a violation of the victim's right to autonomy in general and sexual autonomy in particular. Second, unwanted sexual interactions in virtual spaces seem to have the potential to cause serious psychological harm, as evidenced by reports from victims. Although harm may not be a direct consideration when defining sexual wrongs, Danaher includes it in the analysis for

two reasons: it provides an additional reason to treat these interactions as serious moral wrongs, and it helps address the potential criticism that virtual interactions are less important because they are not "real."

#### **IV. Three Objections to the Moral Wrongness Argument**

- 1) **The 'It's Not Real' Objection:** argues that unwanted virtual sexual interactions shouldn't be considered serious moral wrongs because they are not real or are less real than other types of unwanted sexual interactions, and therefore don't carry the same moral weight. The objection can be raised in two ways: as a general objection to the moral significance of virtual sexual interactions or as a more nuanced objection comparing virtual interactions with real-world equivalents.
  - **Reply to Objection:** However, this objection doesn't seem plausible, as virtual interactions, even when mediated through avatars or text, are real and can have real effects on people's lives. Adding an extra representational layer or using cartoon avatars doesn't necessarily make the interaction less morally weighty. Empirical research has shown that people can develop a strong sense of identity and self-presence with their virtual avatars, and that what happens to these avatars can have significant effects on their real-world behaviors and well-being. Moreover, research indicates that people can experience virtual reality environments as real, even though they may know that it's an artificial setting. Although there are differences between virtual interactions and physical-world interactions, it doesn't mean that virtual interactions lack moral weight. Dismissing their moral salience as "not real" or "less real" is not a convincing argument.
  
- 2) **The 'It's Just a Game' Objection:** argues that ordinary moral rules do not apply to virtual interactions, considering them as a form of fantasy or game. Danaher acknowledges that many games do involve the suspension of moral rules, citing examples like sports (boxing, rugby), board games (Poker, Diplomacy), and video games (Hitman, Assassin's Creed, Grand Theft Auto). Fictional activities like plays and movies also suspend moral rules, as they often depict immoral acts. Danaher questions if virtual environments could be seen as gameplay or make-believe and raises three points in response:
  - **Reply #1 to Objection:** Not all unwanted virtual sexual interactions take place in game-like environments or as part of some fantasy/make-believe. Many examples involve open-ended socializing in VR, and community norms often do not tolerate unsolicited sexual interactions.
  - **Reply #2 to Objection:** Even if these interactions occur within environments where unsolicited sexual interactions are encouraged or tolerated, it is unclear if they would be free from moral reproach. Ordinary moral rules may still apply if virtual interactions have harmful and lasting real-world effects. Additionally,

games can be a training ground for moral virtues, and game designers should pay attention to this.

- **Reply #3 to Objection:** Immoral sexual interactions within games or fantasy realms are not as easily tolerated as other kinds of immorality. Studies have shown that most people find virtual child sexual abuse immoral, even if they tolerate virtual murder and torture. The debate around virtual sexual immorality often involves actions carried out by game players against artificial characters, not human-controlled avatars, so the objections would apply even more to cases involving human-controlled victims.
  - **The Gamer's Dilemma:** highlights an inconsistency in people's attitudes towards virtual immorality. The dilemma states that while most people find virtual child sexual abuse immoral, they tolerate virtual murder and torture. Luck argues that people should either tolerate or condemn both types of actions. Most contributors to this debate agree that virtual child sexual abuse is immoral, supported by studies of users of virtual social platforms who generally view sexual "ageplay" as transgressive. Danaher also notes that the debate usually concerns actions against artificial characters, not human-controlled avatars, so objections would apply even more to cases involving human-controlled victims.
- 3) **The 'Unrestricted Consent' Objection:** states that unwanted virtual sexual interactions are not serious moral wrongs because people implicitly consent to them by participating in virtual games or VR social platforms. The objection suggests that either people should know they are liable to be exposed to such experiences and therefore consent by using these platforms, or that by not withdrawing from the virtual environment when they are at risk of experiencing unwanted sexual interaction, they signal consent.
- **Reply to Objection:** Danaher refutes this objection, comparing it to the "asking for it" defense used in real-world cases of sexual assault and rape, which unfairly places the responsibility on the victim to communicate non-consent rather than on the perpetrator to obtain affirmative consent. Danaher emphasizes that ethical and legal consensus is shifting away from inferring consent from nonverbal behavior, recognizing the unfairness of forcing victims to communicate resistance or remove themselves from virtual environments. Victims may be afraid, shocked, or psychologically unable to do so in such situations. Additionally, requiring victims to leave virtual environments when they don't want to be subjected to sexual interactions would be unfair as it effectively excludes them from these increasingly common spaces, perpetuating social injustice, particularly for women.

**What Type of Moral Wrong Is It?** Danaher discusses the moral implications of unwanted virtual sexual interactions and how they should be classified within the existing hierarchy of moral wrongs. He considers the possibility of treating them as *sui generis*, meaning they are a unique phenomenon that should be analyzed on their own terms, distinct from other sexual wrongs. However, he acknowledges that much of the preceding discussion relies on drawing

parallels between unwanted virtual sexual interactions and other moral wrongs, including sexual wrongs.

**Against the Physicalist Paradigm of Sexual Assault:** Two possibilities arise when attempting to fit virtual sexual interactions within the existing categories of rape and sexual assault. First, Danaher suggests that unwanted virtual sexual interactions could be considered akin to rape and sexual assault. However, this would require redefining these offenses, which typically require physical contact in most countries' legal definitions. *Danaher proposes a shift away from physical contact as the defining feature and instead focuses on violations of sexual autonomy or sexual agency.* If the physicalist paradigm is maintained, unwanted virtual sexual interactions might not be considered rape or sexual assault. However, Danaher notes that haptic technologies, such as teledildonics (smart sex toys), can enable physically immersive cybersex experiences. Cases involving hacked interfaces or deception could potentially be considered genuine forms of rape and sexual assault. Unwanted virtual sex without haptic technologies might still be treated as a separate category of moral and legal wrong, considering that risks associated with physical sexual contact, such as sexually transmitted diseases and unwanted pregnancies, do not arise in virtual sexual contact.

**Conclusion:** Danaher analyzes unwanted virtual sexual interactions, arguing that they are a serious moral wrong from both deontological and consequentialist perspectives. The author suggests treating these interactions as a new type of sexual assault and rape, rather than a sui generis category of sexual wrongdoing.

**Proposed Solutions:** To address this new form of sexual wrongdoing, Danaher proposes three solutions:

- 1) Designers of VR technologies and platforms must take responsibility for preventing unwanted sexual actions within their virtual platforms. This could involve incorporating consent features, controlling user interactions, or designing out the possibility of sexual contact in certain VR platforms, such as those primarily for children.
- 2) Strong community standards should be established, monitored, and enforced by moderators of virtual spaces to outlaw unwanted sexual interactions.
- 3) Danaher calls for legal regulation of VR spaces, with legislators and legal reformers working to include virtual sexual wrongdoing within the scope of the law.

## V. The Gamer's Dilemma

**The Dilemma:** (a) Virtual murder appears morally permissible, (b) Virtual pedophilia is undoubtedly morally impermissible, but (c) The moral distinction between the two cases is unclear since neither case involves actual harm to real people. We need an argument to establish the moral difference between these scenarios. Keep in mind that, unlike the case of virtual sexual assault, the Gamer's dilemma focuses on moral transgressions against artificial characters, meaning no real child is the victim of virtual paedophilia and no real person is the victim of



virtual murder. We are considering cases where the perpetrator of the crime is a human and the victim of the crime is an artificial character in discussing the Gamer's dilemma.

- **Argument 1 - Social Acceptability:** Morals can be reduced to conventions, so there is a moral distinction between the two acts because there is a social distinction between them. This assumes the controversial ethical view known as cultural relativism.
- **Argument 2 - Significant Likelihoods:** "Any act significantly likely to result in harm is immoral. Committing acts of virtual murder does not significantly increase the likelihood of committing actual murder, whereas committing acts of virtual pedophilia does significantly increase the likelihood of actual pedophilia. Therefore, virtual pedophilia is immoral, but virtual murder is not necessarily so" (33). IN response to this line of reasoning, could virtual pedophilia potentially lead to less harm to children by "providing an acceptable outlet for dangerous desires and encouraging pedophiles to seek alternatives to real children"?
- **Argument 3 - Enjoying Competition, Not the Kill:** In the case of virtual murder, one enjoys the competitive aspect of the game, not the act of murder itself (they wouldn't enjoy murdering in real life). In contrast, those engaging in virtual pedophilia would presumably enjoy the act of pedophilia itself (they would enjoy pedophilia in real life). This explains why virtual murder is permissible while virtual pedophilia is not. (Is it accurate to say that people don't enjoy the act of killing itself in video games? What about someone who plays Grand Theft Auto just to kill random civilians rather than engaging in the competitive story mode?)
- **Argument 4 - Unfairly Singling Out a Group for Harm:** "While the acts of murder and pedophilia both result in a person being harmed, only the pedophile unfairly targets a specific group for harm. This, they may argue, is what makes pedophilia a far more harmful act overall. This argument seems to have some merit. Although computer games involving virtual murder may be socially acceptable, it is doubtful that a game focusing solely on murdering Jews or homosexuals, for example, would be tolerated" (34).
- **Argument 5 - The Special Status of Children:** "This argument builds upon the idea that children have a special status. Children possess properties such as innocence, defenselessness, etc., which, all other things being equal, make harming a child worse than harming an adult" (35). Okay, so does this mean virtually murdering an artificial depiction of a child in a video game is also morally unacceptable?
- **Option 6 - Bite the Bullet:** Either acknowledge that both virtual murder and virtual pedophilia are morally prohibited or concede that both are morally permissible.

- **Discussion Question:** Which of these responses to the dilemma do you find most plausible, and why? Which do you find least plausible and why?