

the effects of desensitization by a factor of 10, if not 50.”

Decades of research on violent video games haven’t turned up any evidence that they alone cause real-world crimes, although they’re not entirely benign either, despite insinuations to the contrary by their passionate defenders. In a 2010 meta-analysis of studies of more than 130,000 people, published in *Psychological Bulletin*, Ohio State University psychologist Brad Bushman and colleagues found that “exposure to violent video games was significantly related to higher levels of aggressive behavior.” Numerous other studies have found links to physiological arousal, stress, anger, and diminished empathy.

It’s unknown how these factors may be affected by VR, in part because the technology is so new and the games aren’t yet widespread. But one of the strongest indications about potential negative effects can be extrapolated from VR’s ability to induce positive effects. VR-based therapies have been shown in lab studies to help with a wide range of behavioral health issues, including PTSD, depression, phobias, substance abuse, and body image disorder. Using sensors that measure galvanic skin response, researchers have shown that the illusion of immersion in VR along with the restriction of other stimuli fools the brain into perceiving the virtual world as real. The positive effects suggest that what happens behind the VR mask doesn’t stay behind the mask and that there’s a permeable membrane between virtual life and real life.

Jeremy Bailenson, a cognitive psychologist who heads the Virtual Human Interaction Lab at Stanford University, has studied the effects of VR for more than a decade, and his research has shown that immersion acts as an amplifying factor—which is why, he says, there should be cause for concern. “Media tends to be more

influential when implemented in immersive virtual reality rather than in traditional formats,” says Bailenson. “My lab typically focuses on prosocial outcomes—for example, using VR to teach empathy, foster communication, and deliver science lessons. However, I suspect that violent media will also be more influential in VR. Murder in a [console] game is one thing. In immersive VR, the acts feel real, since the motor and perceptual systems are receiving high-fidelity feedback and input.”

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The worry is not just that violence in VR might accelerate aggression, but that the sheer terror of the experiences will invoke the same neurological and physiological fear responses that they might in real life, and with real-world consequences like PTSD, anxiety, or depression. In a paper on ethical concerns related to VR published in *Frontiers in Robotics and AI* in April, Thomas Metzinger and Michael Madary, philosophers at Johannes Gutenberg University Mainz in Germany, recommended that people not be allowed to do things virtually that they wouldn’t do in real life, as the sense of embodiment in VR is so strong. They also

expressed sharp concern for the psychological health of those who may begin to confuse VR with actual reality. “One thing we are demanding is longitudinal studies of people who stay in VR for longer periods of time,” Metzinger says. “If you let something loose on a population of, say, a million people, there may be some small number who have a vulnerability that nobody thought about.”

Even some game creators have expressed trepidation. Guerrilla Games, a video game developer based in Amsterdam, announced last year that VR violence is so disturbingly realistic that its first-person shooter game, *RIGS*, would allow players to shoot but not kill. At a gaming industry convention, Guerrilla Games director Piers Jackson explained that the decision was made to protect players, because death in VR “is more intense.”

Despite such voices of caution, VR devices will soon be strapped on heads across the country, and violent games are sure to follow. The Oculus Rift headset, which went on sale in March, has already inspired independent developers to design a controversial game-like simulation of the 9/11 attacks for the platform, putting users into the perspective of someone inside the World Trade Center’s north tower, complete with the experience of jumping to one’s death. In October, Sony is to release a VR headset for its PlayStation console with titles such as *Until Dawn: Rush of Blood*, a horror game in which the player must battle an ax-wielding, clown-faced killer, among other terrifying foes. There will be plenty of nonviolent games as well, though if the market has proven anything, it’s that competitive blood sport is what gamers prefer most. How they react when it’s virtually real remains to be seen.

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into a new relationship, while women's timelines were substantially longer. "Women are predisposed to postpone the emotion," Harrison says. "It's an inherent protective mechanism, giving them time to accurately assess a partner's mate value."

Men, however, may also have adaptive impulses that drive them to less than truthfully say "I love you" before having sex as a way of boosting their reproductive chances, says Joshua Ackerman, an assistant professor of psychology at the University of Michigan. In a 2011 study published in the *Journal of Personality and Social Psychology*, Ackerman and his colleagues considered the timing of declarations of love in relation to the onset of sex in relationships. They theorized that when men said it first, before having sex, it was a way to gain their partner's trust and thus ease the way to sexual activity—an impulse that the men may not even have been conscious of. "The decision to say they feel love first can make sense strategically," Ackerman says. "Expressions of love can serve other kinds of gains, like short-term romantic relationships."

But women's internal alarms tend to go off when they hear love proclaimed too early in a relationship, Ackerman found. They may rightly interpret it as an insincere ploy for sex without the commitment to back it up—a critical factor since women have the higher burden of bearing and raising children. Women felt significantly happier hearing postcoital declarations of love, perhaps because they had already incurred the potential cost of a sexual encounter.

"From an economic perspective, if you have a higher cost, you want to be choosier," Ackerman explains. "From a parental-involvement perspective, in terms of the risk, men tend to have lower necessary investment." And the same risk that makes women wary of too-early declarations of love

may also be the reason they're more likely to withhold their own expressions of love while assessing if their mate is going to stick around.

When women did declare love early on, men interested in short-term flings reported feeling happy about it even if they knew the woman was seeking more commitment than they were prepared to offer. The reasoning? Men presumed sex was on the way, though their happiness declined postcoitally. By contrast, men interested in a long-

Women feel happier hearing men declare love after sex, rather than before, as they've already incurred the potential cost of a sexual encounter.

term relationship reported feeling happy when their partner declared love before ever having sex, but having even more positive feelings if she said it after they'd slept together.

It may not only be adaptive instincts that undergird expressions of love. Markman thinks men more often say "I love you" first for a cultural reason—the expectation that they take the lead in relationships. They're the ones traditionally assumed to ask for an initial date, buy the ring, and propose marriage, so it makes sense that they should also take the plunge with a statement of commitment. "Men believe that women need to be reassured of an emotional connection," Markman says.

It may also be that men have more idealistic attitudes about love than women. "Men tend to have more

romanticized views of relationships in general, which means they're more likely to believe in love at first sight and that love conquers all," explains Gary Lewandowski, a psychologist at Monmouth University in New Jersey.

As a relationship progresses, each person should feel more at ease saying "I love you," Markman says, adding that such "emotional expressions of commitment" are particularly important in Western societies, where romantic love is the presumed basis of relationships. But, he says, demonstrations of caring are ultimately more important than declarations. "Resource commitments demonstrate that someone is willing to sacrifice his or her own short-term well-being to invest in the relationship—that's one of the signals that an engagement ring creates," Markman says. The meaning of the phrase "I love you" also changes over time, he adds. After starting as an expression of intense emotion, it evolves into a commitment to keep engaging in behaviors that benefit and strengthen the relationship.

So when should you first say it? There is no hard-and-fast rule, though the unsurprising advice from Karla Ivankovich, an adjunct psychology professor at the University of Illinois, Springfield, is to say it when you really mean it and not when you don't. That could be after two months or twelve, but the timing matters less than the authenticity of the feeling and the accompanying commitment.

"In relationships, there's an inordinate amount of pressure to get to this stage and even more pressure to reciprocate once it's been stated," Ivankovich notes. "Expressing it before you actually mean it can cause the relationship to fail. But when you avoid definitively stating the emotion, you also put the relationship's progression at risk."

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Road to Recovery



JAMISON MONROE, JR., is passionate about helping children. As the founder of Newport Academy, he is dedicated to the health and wellness of teens at risk. He works tirelessly with teens who suffer anxiety, depression, eating disorders, substance abuse, self-harm, and co-occurring disorders. He should know what it takes, as he himself suffered as a teen. Today, he is a regular talking head on national news media, he testified before Parliament in the United Kingdom on the subject of teen prescription drug abuse, and he produced the documentary *Behind the Orange Curtain*. Here are some of his thoughts on the topic of treating teens.

Why are teens more at risk these days?

Teens are at risk now more than ever. The United States currently has 5 percent of the global population, yet accounts for 75 percent of its prescription drug use. We live in a culture that operates on the assumption that everything can be quickly fixed by reaching outside of ourselves and taking a pill to alleviate any discomfort. This might create a sense of immediate relief, but the root of the problem remains untouched. Kids today are not generally taught how to process their feelings and use healthy coping mechanisms. We often don't uncover the underlying causes of mental health issues and substance abuse, which leaves our children at a much higher risk for developing destructive behavior.

Who are the teens coming to you for help?

Newport Academy focuses on teens who

are exhibiting self-destructive behaviors to cope with feelings of inadequacy, anxiety, depression, and/or lack of self-worth. Our teens are brilliant, creative, intelligent people who are suffering under societal and environmental pressure. For many of our clients, life is difficult to manage, and they look for relief from pain and suffering through self-medication.

Besides self-harm, eating disorders, and substance abuse, what other issues do you see?

The core issue we address at Newport Academy is a lack of self-esteem. This insecurity and self-doubt leads to depression, anxiety, and self-destructive behaviors. When we look past the behaviors, we are able to see the unmanageable issues on a much deeper level. We walk our teens through their struggles and help them find a path to acceptance and healthy living.

What is your philosophy on tough love?

Our philosophy is love. Upon entering Newport Academy, our clients typically have a lack of self-respect and myriad insecurities. We meet them where they are and provide a safe and nurturing environment for deep issues to surface. When a teen comes to Newport Academy, our compassionate staff loves them until they can love themselves. The internal healing begins once kids see that they are beautiful, bright, and powerful enough to take control of their lives. Love is the foundation.

What is family care? What does this treatment entail?

Teens are a product of their family system, and many families that we treat experience dysfunction. Family therapy is a primary focus of healing at Newport Academy, and we expect families to put effort into their recovery as part of the healing process.