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"PLAYING THE MOVIE DIRECTLY": PERCEPTIONS OF TOBACCO CONTENT IN VIDEO GAMES

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ABSTRACT

Background/aims

Despite visual similarity to films and the presence of tobacco imagery, video games have been overlooked as a vector for conveying tobacco content to adolescents. This qualitative study examined how tobacco content is perceived by adolescents and explored why game designers choose to insert tobacco imagery into games.

Methods

 Interviews were conducted with video game-playing adolescents (n=20), young adults (n=28), and game designers (n=5). Participants recalled games with tobacco imagery, described the imagery and its narrative effect, and discussed potential regulation. Interviews were transcribed and analyzed for themes and exemplars.

Results

Game designers inserted tobacco content to signify meaning to players. Adolescents understood this messaging, assigning intended meanings to in-game tobacco use. Participants believed that tobacco content was benign. Participants were resistant to regulation of game content, citing artistic freedom.

Conclusions:

Games including tobacco content create new virtual spaces where adolescents spend time experiencing normalized, acceptable tobacco use.

Key words:
Qualitative research
Video games
Tobacco
Adolescent
Young adult

"PLAYING THE MOVIE DIRECTLY":

PERCEPTIONS OF TOBACCO CONTENT IN VIDEO GAMES

Tobacco use among adolescents and young adults remains unacceptably high (Singh, et al., 2016). Among smokers, 9 of 10 first tried smoking by age 18, and most began before age 26 (U.S. Department of Health and Human Services, 2014). Between 1964 and 2014 20 million people in the United States have died from tobacco-related diseases and tobacco use is the leading cause of preventable morbidity and mortality. In 2012, the Surgeon General's Report estimated that 5.6 million children currently under 18 would die from tobacco-related diseases, unless strong evidence-based interventions were implemented and sustained (U.S. Department of Health and Human Services, 2012). Registered nurse (RN) researchers are well positioned to generate, disseminate, and contribute expert knowledge relevant to tobacco prevention and control strategies, since part of nursing practice involves promoting and protecting the health of populations (The American Nurses Association, 2015).

The tobacco epidemic originated with and has been extended by the tobacco industry, using deliberately deceptive practices (U.S. Department of Health and Human Services, 2014). Tobacco industry marketing has long associated smoking with characteristics adolescents value: friendship, social acceptance, masculinity or femininity, rebelliousness, risk-taking having fun, managing stress, relaxing, and appearing sophisticated, with tobacco imagery serving as a signifier for these desirable traits (Anderson, Dewhirst, & Ling, 2006; Lovato, Watts, & Stead, 2011; Proctor, 2011). While the tobacco control movement has worked to subvert this positive messaging, these associations persist (Proctor, 2011). For example, multiple studies demonstrate that exposure to tobacco imagery in film is associated with youth uptake of smoking (Gendall, Hoek, Edwards, & Glantz, 2016; Morgenstern, et al., 2013; Primack, et al., 2012; Song, Ling,

Neilands, & Glantz, 2007; US National Cancer Institute, 2008). Tobacco imagery is also present in newer media forms. Despite visual similarities to film, video games have largely been overlooked as vectors conveying tobacco imagery to adolescents and young adults. Yet most adolescents play video games regularly (Lenhart, et al., 2015), and many games contain tobacco imagery (Barrientos-Gutierrez, Barrientos-Gutierrez, Lazcano-Ponce, & Thrasher, 2012; Barrientos-Gutierrez, Barrientos-Gutierrez, & Thrasher, 2012; Cranwell, Whittamore, Britton, & Leonardi-Bee, 2016; Forsyth & Malone, 2016a, 2016b). In this qualitative study, we examine how tobacco imagery is perceived by adolescent and young adult video game players and explore why game designers choose to insert tobacco imagery into games.

Adolescence, young adults and media

Adolescence to young adulthood is characterized as a time of intensive identity development, such as seeking out new experiences, exploring potential selves, establishing relationships and risk-taking (Arnett, 2000; Erikson, 1968; Konrad, Firk, & Uhlhaas, 2013; Kroger, Martinussen, & Marcia, 2010; Meeus, 2011; Proctor, 2011; Steinberg & Morris, 2001; Sussman & Arnett, 2014). Bandura's social cognitive theory argues that people learn by observing others and modeling behaviors that result in rewards (Bandura, 1986). Media play a role in this development by normalizing certain ways of being and problematizing others (Elmore, Scull, & Kupersmidt, 2017; Scull, Kupersmidt, Parker, Elmore, & Benson, 2010). Previous research links exposure to risk-taking behavior imagery, such as smoking or drinking, to the subsequent uptake of that behavior (Anderson, de Bruijn, Angus, Gordon, & Hastings, 2009; Dalton, et al., 2009; Glantz, Iaccopucci, Titus, & Polansky, 2012; Hanewinkel, Isensee, Sargent, & Morgenstern, 2011; Primack, et al., 2012; Song, et al., 2007).

Narrative transportation theory (Green & Clark, 2013) proposes that active engagement with tobacco content within the context of video game play might have more influence on behavior than watching tobacco content in more passive media types. According to this theory, individuals are "transported" into narrative worlds through cognitive, emotional, and image-based engagement. In turn, this "transportation" into the narrative serves to reduce the effects of counterargument, create connections with characters, and increase emotional involvement. A 2011 meta-analysis on the effects of risk-glorifying media exposure on risk-positive cognitions, emotions, and behaviors supports this theory, finding that the effects were stronger when "active" media like video games were involved, versus more passive media like movies or print (Fischer, Greitemeyer, Kastenmuller, Vogrincic, & Sauer, 2011), thus illustrating the power of the transportive effects of video games.

METHODS

We recruited an in-person convenience sample of adolescents aged 13-21 (n=20) using flyers and snowball sampling in a Northern California metropolitan area and advertised for online participants (n=28) aged 18-25 on the website *Reddit* in the subReddit *Samplesize (Reddit, 2015)*. Inclusion criteria were: speaking and writing English and playing video games at least two hours a day on most days for at least a year. Using personal networks, we recruited game designers (n=5) who worked in the video game industry at least one year. Written consent and/or assent was obtained. We obtained written parental consent for participants under 18.

For in-person interviews, we met participants in locations they selected. Participants completed demographic surveys, including questions on age, race, ethnicity, school status, smoking status (current smoker/ever smoker), favorite video game devices and games, age at

gaming initiation, and average daily gaming hours. We asked participants to recall games containing tobacco imagery, to describe this imagery and its narrative effect, and their openness to regulating smoking in video games. We followed a similar strategy for online participants, who completed online demographic questionnaires and responded to written questions.

Game designers were interviewed either in-person or via Skype and asked to recall tobacco imagery in games, whether they had placed tobacco imagery in games, why tobacco imagery might be used, and their opinions on potential regulation of the industry.

Interviews were transcribed and coded using NVivo software (QSR International Pty Ltd, 2014) using an interpretive phenomenological (IP) approach focused on identifying paradigm cases, themes, and exemplars as described by Benner (Benner, 1994; Smith, Flowers, & Larkin, 2009). Paradigm cases were robust examples of the phenomena, clarifying meaning and leading to understanding. Thematic analysis allowed for within-case and cross-case examination of the data. Meaningful patterns, stances and concerns were considered, with an understanding that lives were ambiguous, variable and messy (Benner, 1994). Exemplars were used to convey the meaning of the various aspects of a paradigm case or thematic analysis. Together, these strategies were designed to provide the basis for entering the participants' world and understanding socially embedded knowledge. As findings emerged, they were also shared with other qualitative researchers for feedback and refinement. Study procedures were approved by the University of California, San Francisco Committee on Human Research (UCSF's Institutional Review Board). Participants were identified by pseudonyms.

RESULTS

Participants

See table 1 for adolescent and young adult participant details. Five game designers participated, having worked a mean of 8.8 years in the industry (range 2-25 years.) Two designers worked for major studios and three for smaller, independent studios.

Themes

Three main themes emerged from the data: (1) tobacco content as shorthand, (2) risk perception and (3) the question of regulation.

Tobacco Content as Shorthand

Game designer perspectives. Game designers implicitly understood that using tobacco content in games served as a signifier, allowing specific messages to be quickly conveyed to players. Henry stated that inserting tobacco imagery created specific "vibes" in a "quick and dirty" way. Designers described how tobacco props were used to convey that characters were cool, world weary, 'badass', rebellious, a 'bad guy', grizzled, edgy, and/or dangerous. Vincent, an independent designer, stated that he would insert tobacco content into the game if it "fit the character":

> You would definitely have that aesthetic of, 'This guy is cool. This guy is edgy,' or,
> 'This girl is cool. This girl is a little bit dangerous,' and kind of the bad boy/bad girl
> thing. It's a trope as much as it is in the movies, I think, to just establish that this person
> doesn't play by the rules or whatever. The same kind of appeal to kids – or not
> necessarily kids, not because we want you to smoke, but, 'This guy's cool.'"

Seemingly uncomfortable with what he had said, Vincent corrected himself after suggesting that characters who smoke could potentially encourage smoking among kids, drawing a distinction between the appeal of a "cool" character and the behavior and image that such

characters display. Focused on creating the game aesthetic, Vincent chose tobacco as a prop to signify rebelliousness.

Kai, working for a successful military game franchise, echoed Vincent's focus on game aesthetics without problematizing the underlying smoking behavior, describing a character in the following way:

He was a war veteran. He smokes. It's just part of his character. It's not really to showcase his addiction. It's more to showcase his toughness and that he is so old that he doesn't care anymore.

Kai stated that he included smoking when it "fit" a character's ethos and the mood of the scene, discussing an example of his "appropriate" use of tobacco imagery: "When a person just escaped a situation with his life and he is like 'ah, I need a cigarette to relieve the stress.' He would then light one up, and it's all good." In this illustration, smoking signified that the life-threatening interaction had concluded and the character, and by extension, the player, could relax, thus linking the image of smoking with real life feelings of tension release, relaxation, and self-reward and thereby narratively positioning smoking as a coping mechanism and as a deserved reward after a job well done.

Designers also used tobacco content to create moments in which to reveal a character's state of being, using tobacco as a taken-for-granted signifier. Henry described how he used cigars to light scenes, create drama, and help players understand characters:

Yeah, we tend to do a little bit of shortcutty things - If you fade up, and you're sitting beside a guy, and he's just smoking a cigar, and he flicks it away all cool… how badass this guy is. It's just a shorthand, and I don't know exactly why, but it's just such a

powerful image of when a guy looks away, and he's really tense, and he smokes a cigar

and he just has a specific way of flicking at a cigar.

Henry's account demonstrates the power of decades of tobacco visual marketing imagery on

socially-embedded understandings. While he admits he does not know why smoking imagery

conveys messages of power in intense situations, he is confident that it does, and thus uses it to

advance similar narratives in games. Casual cigar smoking is a shorthand way to convey

coolness under pressure. For Henry, as for other designers, game design was about creating

artistic, appealing games using common signifiers that were assumed to be easily understood.

Adolescent and young adult perspectives. The flow of meaning between game

designers and players was evident. Participants easily recalled the presence of tobacco and

understood the various meanings designers wanted conveyed, including being tough, masculine,

cool, rebellious, hardened, experienced and/or in need of stress relief. Frequently mentioned was

that smoking imparted "coolness" to characters, marking them as different from others.

Discussing how she enjoyed seeing other player-created avatars smoke in multiplayer games,

Ellen, 21, observed:

> When you see someone - when I saw one of my friends with that accessory [cigarettes],
>
> I'd be, like, 'Oh, that's very cool. You got it yesterday?' And they'd be, like, 'Oh, yeah,
>
> yeah.' And you know, maybe it would complement their outfit, or something, and it
>
> would make their entire character look better, or more well put together.

For Ellen, in-game tobacco use enhanced characters, making them better than they would be

without cigarettes. Victor, 20, also identified smoking characters as "looking nice," stating that

if he had more money (it costs real money to obtain virtual accessories in some games) he would

have bought smoking accessories. Tom, 19, recalled that a high ranking "white dude" in the

game *Call of Duty* smoked and "it looked pretty cool." Asked what was cool about smoking, he

responded, "I don't know, just something about it." Discussing an older character who smoked

in *Left for Dead*, David stated: "I think he was a war vet maybe, so he was old, and he's kind of

wise. He just really seems kind of cool." Attaching tobacco imagery to characters signified

certain meanings to which players responded seamlessly and unquestioningly, as the designers

intended.

Masculinity was another attribute that tobacco use imparted to game characters.

Discussing a smoking character in *Halo,* Joel, 18, commented:

> I think it makes him look more masculine. I don't know if it's the smoking, per se, but his
>
> figure, you know. The fact that he has these big muscles and the cigarette itself just
>
> amplifies his masculinity.

Joel identified cigarettes as value-added items, elevating an already masculine man to hyper-

masculinity. Smoking imparted the impression of grander masculinity in other games too.

David, a quiet college freshman, playing the first-person shooter *Duke Nukem*, identified Duke,

the title character, as a heavy cigar smoker, stating: "He is the epitome of manliness, they show

him smoking a cigar …he has a big box of them [cigars]." Describing Duke, David placed

Duke's tobacco use next to his masculinity, each co-constitutive, each enhancing the meaning of

Duke's character.

Echoing game designers, participants spoke about how smoking "fit" characters and

increased "realism." Marla, 22, stated, "I'm sure I've seen characters in GTA (*Grand Theft Auto)*

smoke. It makes sense to me for those characters to smoke, it's part of the realism." Ethan, 19,

commented, "As in movies, or literature, we want characters to be convincing, so smoking can

make games more immersive." Marla and Ethan's narratives suggested that it was normal for certain characters to smoke and that there was a "tobacco character" type in games. Commenting about a western-themed game, John, 13, stated, "Well it looks kind of normal for a westerny character to have a cigarette… in that time they did not know it was bad for you, so that's not like it's weird or anything." He described how tobacco content in games set in post-apocalyptic futures would also be appropriate because, "I'm sure you'd be stressed out and might want to have a cigarette". Woven throughout participants' narratives were comments about how smoking enhanced the intended personality of the character, making the character more "realistic." Given that these participants all resided in countries with active anti-smoking campaigns and where ads are limited, it is testament to the enduring nature of marketing imagery that tobacco use still reflects such shared understanding.

Risk Perception

      Adolescent and young adult perspectives. Participants described full immersion with the play experience, with Ryan, 20, describing the feeling as "playing the movie directly." While participants recalled many games with tobacco content, when asked whether they thought tobacco content influenced their perceptions of real-world smoking, despite engagement with the game, all stated it made no difference. A typical comment was, "He's this big guy who just had these huge muscles and he has a cigarette hanging from his mouth and he just smokes. I don't think anything about it. He's just one person in the game, not me. So yeah, that's just how I feel like. It's not me, just them" (Joel, 18). Maria, 15, stated that tobacco content made no impression: "It didn't make me feel anything because I don't use it, so it really doesn't affect me

directly." Lucas, 25, commented, "He smokes, so what?" Summarizing how she felt about in-game smoking, Casey, 22, stated:

> Trees have leaves, some characters wear high-heeled boots, and some characters smoke. It's 99% decoration. It does nothing. It's like a necklace. This character is different from the other characters. This one smokes.

Casey indicated that she perceived in-game smoking as cosmetic enhancements without consequence, like characters with different hair colors. She argued that gaming spaces were radically free places where players had agency and control, and thus were unaffected by tobacco content. Victor, 20, agreed:

> I don't think it really does anything for changing your mind whether you're going to smoke or not…at this point with the information that's available about smoking, if you're going to smoke, it's because you're gonna smoke. And if you are, you are, and I don't think a video game is going to change your perception.

Becoming a smoker was thus portrayed as an inevitable identity for some, unrelated to social exposures or influences, a view that contrasts with the literature on smoking initiation (Fischer, et al., 2011). Left out was the evidence that viewing smoking imagery in media is a causative factor for smoking initiation (Lovato, et al., 2011). Participants presented decisions to smoke in real life as a fait accompli, made by smokers with complete information about the risks and in isolation from normalizing cultural influences.

However, several participants' behavior indicated that tobacco imagery was not as benign as perceived. Nolan, 21, while denying that tobacco content in games had any impact on his decision to smoke or his perception of smoking, commented that viewing smoking imagery while playing made him "feel like having a cigarette." Asher, 18, commented that the only effect

that in-game smoking had was that he learned a new way to get cigarettes out of packs that was "badass." Both Nolan and Asher, while denying that game tobacco content was a factor, described real-world behavior that changed due to game tobacco content.

Some were concerned that while tobacco content had no influence on them, it might sway others. Maria stated, "It didn't bother me because I wouldn't try that personally, but then you think about the other people who play it, they're not like you. They might actually try it." Others expressed that tobacco content might have some effect, especially on younger players. Mariah stated that, "Young people are too easily influenced by what they see," saying she would like to keep smoking "out of games."

Other participants considered tobacco content a trivial issue compared to other problem issues in games. Laurie, 20, after describing a situation in which her younger brother had smashed a television, attributed this to playing violent games, stating: "I think violence is a bigger issue with videogames than anything. I think parents need to monitor that. Smoking I don't think as much." For Laurie, other graphic content presented potentially greater comparative and immediate harm than did tobacco. For most participants, tobacco content in video games was not problematized.

The Question of Regulation

Asked about whether game content should be regulated in any way, both gamers and designers spoke of "choice" and valorized the ability to choose the games they designed and played.

Adolescent and young adult perspectives. Participants argued that engaging with tobacco content was without personal consequence and should not be regulated beyond the

current voluntary rating system. Laurie, 20, concerned about how regulating in-game smoking would affect the imported games she enjoyed, stated:

> I think it's an artistic thing [smoking in games]. It's hard to say, "Oh, we're going to ban these characters." If you say that in America, that would put off a lot of video games that come from other countries, too. Maybe that will promote more of American games, but I know it would be a big scene - I know a lot of people who love these Japanese games."

Daniel, a 21-year old college senior, argued that it should be parental and player responsibility to monitor game content and the gaming industry should not be held accountable:

> Honestly, it says on the back, "May contain violence, alcohol, and smoking" clearly and that's what the rating system's for. You can't use it as a scapegoat just because you let your children play it, you know what I mean? Either you monitor it - you can't blame the designer for putting that aspect in there.

> Other participants were concerned that regulating tobacco imagery would have larger

effects on one's personal freedom to use tobacco in real life.   Anna, 18, commented:

> I don't care personally. If they're smoking in the game, then they're smoking in the game. It's not like just because they're smoking in the game that someone's just going to pick up smoking. Smoking's everywhere. It's on TV too. Are they're going to cut smoking on TV? Are they going to cut smoking on the Internet? Are they going to cut smoking out of real life? It's legal, so I don't think there should be a problem with it. If they were smoking weed or doing some other kind of hard-core drug, I could understand that. But smoking…

 Anna's comments demonstrate why the ubiquitous availability of tobacco products and images undermines public health messages about their deadliness. For Anna, something readily

available in real life should not be a problem in video games.

Game designer perspectives. Game designers were clear that they wanted the choice to use tobacco imagery, believing that impact of tobacco content on adolescent players was negligible. Mary commented:

> But I don't think any game would ever change a sane person who would never shoot somebody to a person who would shoot somebody. And I think the same goes for smoking or drinking. Sure, it keeps being in your subconscious and but if you're a kid and you make a decision to start smoking it's not because you played the game. It's because of the peer pressure mostly.

Mary was reacting to arguments made by many video game opponents that identify gaming as one of the root causes of serious societal violence (Donovan & Garriott, 2010). Mary acknowledged that images might stay in a person's "subconscious," but as with game players, she located smoking uptake as part of a core identity, something unaffected by repeated exposure.

Game designers also noted that the Entertainment Software Rating Board (ESRB) rated games and listed content descriptors on the game box, allowing parents to decide whether the game was appropriate. Regarding the possibility of regulating tobacco content, Henry stated:

> That choice should always exist for the artist and then regulating consumption of that content should be the parents and the children. One of the things that helps to regulate that is ESRB itself, [it has] a very clear set of guidelines. You can look on the back of the box. It will tell you the age. It will tell you what's in the game.

Henry argued that it was the artist's job to create, the ESRB's job to inform, and the consumer's job to choose which games to play. The idea of mandatory limitations on game content was distasteful to game designers, with Henry calling it "awful" and stating that "people wouldn't be able to express themselves." For Henry and other designers, cigarettes brought the added value of intrinsic meanings. Game designers expressed confidence in the ESRB and in parents' ability to choose appropriate games. However, a recent study found that while 42% of the examined games contained tobacco content, only 8% had a tobacco-related content descriptor on the box, making it difficult for parents to effectively choose games without tobacco (Forsyth & Malone, 2016a).

DISCUSSION

In many ways, tobacco imagery in contemporary video games reflects an earlier era before the tobacco control movement problematized tobacco use.(Brandt, 2007; Proctor, 2011) The United States currently limits public use of tobacco, controls advertisements, and has active anti-smoking media campaigns, but this reality is not reflected in gaming worlds. In many games, tobacco is used in public spaces, advertised in in-game media, available in vending machines, and smoked by characters, thus creating new virtual spaces where adolescents spend time experiencing normalized, acceptable tobacco use.

Despite this anachronistic portrayal, participants asserted that tobacco content added "realism" to games, making characters appear "authentic." For example, two games featuring tobacco content, *Bioshock Infinite* and *Red Dead Redemption,* were set in 1912 and 1911 respectively, an era before World War I when smoking rates were still low and before the rise of the modern tobacco industry.(Gamers Little Playground, 2014; TheDepressedTurtle, 2012) *Grand Theft Auto V,* featuring in-game tobacco advertisements and frequent smoking imagery, is

set circa 2013 in a city mimicking Los Angeles,(Gamer's Little Playground, 2013) a place where strong smoke-free laws have existed since the 1990s. Ironically, then, these games reflect created realities in which tobacco is inserted to increase the "realism" of a reality that no longer exists and did not exist in the historical period of the game.

Like moviemakers (Shields, Carol, Balbach, & McGee, 1999), game designers placed tobacco imagery into games because it conveyed meaning quickly and effectively. Rather than concern for effects tobacco content might have on players, designers expressed desires to be true to characters and the art form. Players, aware that smoking was unhealthy, were confident in their capacity not to be influenced by the imagery. Yet, while players were readily able to describe situations where gaming had impacted their lives, they carved out tobacco as an exception that had no personal impact. Players who smoked in real life did not link tobacco use to playing video games with tobacco content. Gaming provided experiences of agentic freedom not always available to players in their real lives. The idea that engaging with tobacco imagery in video games would shape real-world perceptions of tobacco use was unpalatable.

Believing that tobacco imagery was a harmless artistic choice extended to participant perceptions about possible regulation. With few exceptions, regulation was perceived as limiting and an affront to personal freedoms. This echoed the historic arguments of the tobacco industry valorizing the "choice" to smoke as an individual right that should be available to all adults. (Proctor, 2011) The role of corporate entities in shaping such choices, the addictiveness of the products, and other meanings they carried remained unexamined.

This study has limitations. While we interviewed gamers both locally and online to obtain a broad sample and continued interviewing until thematic saturation was reached, the convenience sample means that other viewpoints may be unrepresented. Our sample of game

designers was also small, although to our knowledge no other published studies have examined

game designer opinions on this topic. Our findings cannot, therefore, be generalized to all gamers

or designers. However, to the best of our knowledge, this is the first study to examine

perceptions of tobacco in video games.

CONCLUSION

Gaming electronically is now deeply embedded into the adolescent experience. With

notable exceptions, the public health community has focused on the effects of video game

violence and game addiction on players and the possibilities of using specially designed games to

encourage or discourage certain behaviors. Video games have both been vilified as purveyors

and precursors of violent societies and promoted as new educational tools that will help construct

more creative and flexible worlds (Bogost, 2011; McGonigal, 2011). Video games are also

places that adolescents "go" nearly every day for identity role development, support and

validation (Forsyth, Chelsa, Rehm & Malone, 2017). Just as RNs seek to understand and

advocate for the health and wellbeing of communities to promote health, they should also be

concerned with the content of the virtual environments that their patients frequent. It is important

for RNs to advocate for the development of policies and practices around interactive electronic

media that promote and maintain the health of the population. The American Nurses Association

(ANA) Code of Ethics (2015) states:

> All nurses commit to advancing health, welfare and safety. This nursing commitment
>
> reflects the intent to achieve and sustain health as a means to the common good so that
>
> individuals and communities worldwide can develop to their fullest potential and live
>
> with dignity. Ethics, human rights and nursing converge as a formidable instrument of
>
> social justice and health diplomacy that can be amplified by collaboration with other

health professionals.

Given substantial evidence that tobacco content in movies causes adolescent movie-goers to use tobacco at greater rates than those not exposed, tobacco content in video games is concerning. Tobacco use in gaming imagery serves a normative role, legitimizing smoking as an individual choice, a discourse that the tobacco industry actively promotes.(Balbach, Smith, & Malone, 2006) Adolescents are exposed more frequently and with greater intensity to video games than movies.(V. Rideout, 2015; V. J. Rideout, Foehr, & Roberts, 2010) Tobacco imagery in video games is likely particularly appealing to adolescents and young adults, with its emphasis on coolness, masculinity, being older, rebelliousness and risk taking. Video gaming is also an active experience, suggesting that tobacco content in video games could have more powerful effects on adolescent gamer behavior than passive movie-watching.(Fischer, et al., 2011) More research is needed to understand the extent of video game tobacco content exposure and its effects on perception, uptake and use of tobacco among adolescents.

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Table 1: Adolescent and young adult demographics

	Mean Age in Years (SD)	gender (n)	Race/Ethnicity (n)	Location (n)	Ever smoker (n)	Current smoker (n)	Mean hours per day gaming (SD)	Mean age started gaming (SD)
In-person gamer interviews (n=20)	17.7 (2.7)	F (5) M (15)	Asian (7) Hispanic (4) Caucasian (7) African/Am (1) Multiracial (1)	USA (20)	(3)	(1)	3.8 (1.2)	6.5 (2.9)
Online gamer interviews (n=28)	20.6 (1.89)	F (3) M (24) Andro (1)	Asian (2) Hispanic (1) Caucasian (25)	USA (14) Canada (4) Europe (9) Africa (1)	(18)	(8)	2.7 (.81)	6.95 (4.0)
All gamer interviews (n=48)	19.45 (2.66)	F (8) Male (39) Andro (1)	Asian (9) Hispanic (5) Caucasian (32) African/Am (1) Multiracial (1)	USA (34) Canada (4) Europe (9) Africa (1)	(21)	(9)	2.7 (.81)	7.0 (4.0)

TO GO IN TEXT BOX:

The exemplar of *Metal Gear Solid*

The Metal Gear Solid (MGS) series of games was highlighted by gamers as having memorable tobacco content. The franchise has sold over 49 million games worldwide (Konami, 2016), making it a best seller. The ESRB has 24 entries for the MGS series, with all but two rated "M" for mature. Only one of the games, MGS: Peace Walker, rated "T" for teens, is given a tobacco-related content descriptor (Entertainment Software Ratings Board, 2017). In the game series, the main characters, Solid Snake and Big Boss, are heavy smokers. In a GamesRadar blog, Solid Snake was described as:

> The most famous smoker in gaming history, Solid has been lighting up for decades with little care of the consequences. …He usually keeps a pack handy no matter what his superiors say. Even when dropped into a hostile base in the first Metal Gear Solid, he snuck a pack in his stomach(Gilbert, 2009).

Snake's attitude toward smoking, pervading the entire series, was introduced in the first MGS game. A colleague asks Snake:

> *Dr. Naomi Hunter*: Are you smoking?
>
> *Solid Snake*: Yeah, so what?
>
> *Dr. Naomi Hunter*: Didn't you know that cigarettes contain benzopyrene, a chemical that leads to lung cancer? We now know that when benzopyrene enters the body, it changes to benzopyrene diolepoxide and attaches to the receptors on the P53 gene, the gene which causes lung cancer. The BPDE attaches to the P53 gene in three specific locations and causes pre-cancerous changes to the lung tissue.

> *Solid Snake*: You know a lot about science, but you don't know how good a cigarette
>
> tastes in the morning(IMDb Wiki Community, n.d.).

In this interchange, Snake discounts science about the risks of smoking, suggesting that science is tedious and cannot recognize the experiential value of the first morning's cigarette. Juxtaposing highly technical "facts" with sensual experience, smoking is positioned as an act of resistance to authority. This reifies narratively the idea that smoking is appealingly risky, while reinforcing the behavior of the most addicted among smokers, for whom the first cigarette of the day brings relief from nicotine withdrawal(Benowitz, 2010). In MGS 3, participants were particularly aware of Snake's smoking, as a mission required players to use smoke to spot otherwise invisible lasers. When asked to recall a game with smoking, Grayson, 23, responded:

> Metal Gear Solid is the most memorable… Gritty game, gruff character. In Metal Gear
>
> Solid it [smoking] would slowly drain health [of the game character], but would allow
>
> you to see lasers that would be unseeable otherwise.

Other participants described Solid Snake's smoking as "no big deal" and unimportant. "Since his character likes to smoke, he always just has it. So at the start of the game, he'll already have it. It's already there. You don't have to buy it. It's just there" (Brian, 20). For participants, Snake's smoking assisted in contouring his character, but did not define it. Smoking displayed his strength, experience and non-conformity. Joe, 20, commented, "I wish more characters did [smoke]. Not like they have lungs to lose, right? Snake is cool. Smoking actually hurts his in game health, but it's a neat little characterization." Players viewed Snake's smoking as appropriate since it "fit" his character, a battle worn, rebellious fighter, thus reinforcing the association between traditional masculinity, risk-taking and smoking.

Participants commented on the game loading sequence in MGS IV, featuring Snake power-smoking multiple cigarettes (https://www.youtube.com/watch?v=lhcOXlaPO_U) (brobocops, 2012). Game designer Kai described the sequence as "One of the nicest character models on the market." He explained that Snake smoked during the load so he would not be "just standing there." The designers "had him casually smoking to make him look tough" and "he would be doing something" with cigarettes as "the simplest prop you could introduce into a scene." This sequence appeared iconic, with other designers praising the artistry and lighting without referencing the potential effects on young players of viewing it repeatedly in association with the pleasurable experience of anticipating game play. The comments section under the YouTube video of the load scene were also telling; 125HappyGuy wrote, "Only the strongest of men could resist lighting up," and Punished Snake commented, "I relapsed every time I played mgs4. Snake just makes smoking look so cool" (brobocops, 2012).