No. 08-1448

IN THE
Supreme Court of the United States

ARNOLD SCHWARZENEGGER, in his official capacity as Governor of the State of California, and EDMUND G. BROWN JR., in his official capacity as Attorney General of the State of California,
Petitioners,

v.

ENTERTAINMENT MERCHANTS ASSOCIATION and ENTERTAINMENT SOFTWARE ASSOCIATION,
Respondents.

ON WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE NINTH CIRCUIT

BRIEF OF SOCIAL SCIENTISTS, MEDICAL SCIENTISTS, AND MEDIA EFFECTS SCHOLARS AS AMICI CURIAE IN SUPPORT OF RESPONDENTS

Michael C. Small
Katharine J. Galston
AKIN GUMP STRAUSS HAUER & FELD LLP
2029 Century Park East
Suite 2400
Los Angeles, CA 90067
(310) 229-1000

Patricia A. Millett
Counsel of Record
AKIN GUMP STRAUSS HAUER & FELD LLP
1333 New Hampshire Ave., NW
Washington, DC 20036
(202) 887-4000
pmillett@akingump.com

Attorneys for Amici Curiae

TABLE OF CONTENTS

Page

TABLE OF AUTHORITIES

INTEREST OF *AMICI CURIAE*[1]

Amici curiae are 82 scholars with expertise in psychology, psychiatry, neuroscience, criminology, media studies, communication, and other fields. *Amici* have extensive experience with the research regarding the effects on individuals of media violence, including violence in video games. *Amici* believe that California's ban on the sale and rental of violent video games to minors is based on profoundly flawed research and disregards recent empirical evidence contradicting the harm to minors that California asserts arises from the playing of violent video games (or any other harm). *Amici* submit this brief to respond to the evidentiary claims made in California's brief and in the amicus brief of Senator Leland Yee et al. ("Senator Yee").

The appended List of Scholars identifies each of the individual amici.

INTRODUCTION AND SUMMARY OF ARGUMENT

As respondents explain, California's ban on the sale and rental of certain video games to minors is subject to strict scrutiny because it directly regulates video games based on the content of a game, *i.e.*,

---

[1] The parties have consented to the filing of this brief in letters that are on file with the Clerk of the Court. Pursuant to Supreme Court Rule 37.6, this brief was not written in whole or in part by counsel for any party and no person or entity other than counsel for *amici* has made a monetary contribution to the preparation and submission of the brief.

whether the game is deemed "violent." California asserts that its law is necessary to "prevent[] psychological or neurological harm to minors who play violent video games." Pet App. 23a. Under strict scrutiny, California must both provide "substantial evidence" that the video games it regulates cause psychological or neurological harm to minors who play them, and demonstrate that the restriction will "alleviate these harms in a direct and material way." *Turner Broadcasting Sys., Inc. v. FCC*, 512 U.S. 622, 664, 666 (1994). *See Ashcroft v. Free Speech Coalition,* 535 U.S. 234, 253 (2002).

California has done neither. Indeed, California does not offer any reliable evidence, let alone substantial evidence, that playing violent video games causes psychological or neurological harm to minors. California confesses it cannot prove causation, but points to studies that it says show a "correlation" between the two. Pet. Br. 52. But the evidence does not even do that.[2]

California and Senator Yee also cite studies that purport to show a link between the playing of violent video games and violent, aggressive, and antisocial behavior by minors. But in the court of appeals, California expressly disclaimed any interest in

---

[2] Amici do not address California's argument that, to satisfy strict scrutiny, it need only show a correlation between violent games and the harms it seeks to prevent. Pet. Br. 48-49. Nor do amici address California's threshold argument that strict scrutiny is inapplicable on the grounds that, when sold to minors, violent video games are not protected by the First Amendment at all. *Id.* at 13.

regulating video games sales and rentals to minors to prevent such conduct, Pet. App. 23a-24a, and therefore these studies are waived because the argument was waived. The studies are of no help to California in any event because they document neither a causal connection nor a correlation between the playing of violent video games and violent, aggressive, or antisocial behavior.

Indeed, whether attempting to link violent video games with psychological and neurological harm or with violent, aggressive, and antisocial behavior, all of the studies that California and Senator Yee cite suffer from inherent and fundamental methodological flaws.

- The survey of aggressive behavior. The courts below carefully considered this survey and correctly discredited it because the questions it posed are simply not valid indicators for actual violent or aggressive behavior and because it fails to account or control for other variables that have been proven to affect the behavior of minors.

- The laboratory experimental study of aggression. This study, too, was rightly discounted by the courts below because it relies on proxies for aggression that do not correlate with aggressive behavior in the real world.

- The "meta-analysis" of video game violence research. A meta-analysis combines the results of many other

studies on a particular subject. But the accuracy and utility of any meta-analysis depends on the quality of the underlying studies themselves. Put another way, a meta-analysis of scientifically unreliable studies cannot cure the studies' flaws. Here, the meta-analysis on which Senator Yee relies was compromised because it was based on studies that used invalid measures of aggression.

- "Longitudinal" studies of aggression. A longitudinal study analyzes participants on many occasions over an extended period. The studies that Senator Yee cites are not longitudinal because they observed participants on only a few occasions and over just a short period of time. Additionally, those studies both failed to account for other variables that may explain aggressive behavior and used invalid measures of aggression.

- Neuroscience studies. These studies supposedly show a connection between playing violent video games and altered brain activity. The courts below properly concluded that they do not. Further, the neuroscience studies are rooted in fundamentally flawed statistical methodologies and do not address the cause of brain activation and deactivation in children.

Methodological flaws are only the beginning of the studies' problems. Both California and Senator Yee repeatedly exaggerate the statistical significance of the studies' findings, failing to inform the Court of express disclaimers and cautionary statements in the studies about the nature of their findings.

Finally, California and Senator Yee ignore a weighty body of scholarship, undertaken with established and reliable scientific methodologies, debunking the claim that the video games California seeks to regulate have harmful effects on minors.

ARGUMENT

I. CALIFORNIA'S ASSERTED INTEREST IN PREVENTING PSYCHOLOGICAL AND NEUROLOGICAL HARM TO MINORS IS NOT SUPPORTED BY ANY RELIABLE, LET ALONE, SUBSTANTIAL EVIDENCE.

A. California's Studies Do Not Show A Causal Link, Or Even A Correlation, Between Playing Violent Video Games And Psychological Or Neurological Harm To Minors.

California's ban on the sale and rental of violent video games to minors rests on the same flawed studies that court after court has rejected. Pet. Br. 52-56; Pet. App. 27a-32a, 63a-64a; *Entertainment Software Ass'n v. Blagojevich*, 404 F. Supp. 2d 1051, 1059-1067 (N.D. Ill. 2005), *aff'd* 469 F.3d 641 (7th Cir. 2006); *Interactive Digital Software Ass'n v. St. Louis County*, 329 F.3d 954, 958-59 (8th Cir. 2003); *American Amusement Machine Ass'n v. Kendrick*,

244 F.3d 572, 578-79 (7th Cir. 2001) ("AAMA"); *Entertainment Software Ass'n v. Foti*, 451 F. Supp. 2d 823, 832 (M.D. La. 2006); *Entertainment Software Ass'n v. Hatch*, 443 F. Supp. 2d 1065, 1069-70 & n.2 (D. Minn. 2006); *Entertainment Software Ass'n v. Granholm*, 426 F. Supp. 2d 646, 652-54 (E.D. Mich. 2006). The courts were right to reject these studies because they do not even establish the "correlation" between violent video games and psychological harm to minors that California says exists, let alone the causation of harm that, as respondent explains, the First Amendment requires. Nor do the studies show a connection between playing violent video games and violent or aggressive behavior of minors, which explains why California disclaimed that interest below.

First, California points to a 2004 study by Douglas Gentile of approximately 600 eighth and ninth-grade students. Pet. Br. 52-53 (citing JA 600). These students completed surveys that asked questions about the types of video games they preferred and how "violent" they were. (The survey did not provide any definition of "violent.") The survey also recorded how often the students played the games; the students' hostility level; how often they had argued with teachers during the past year; their average grades; and whether they had been in a physical fight in the past year. JA 613-15. From the survey answers, Gentile concluded that "[a]dolescents who expose themselves to greater amounts of video game violence" were more hostile and reported getting into more arguments with teachers and physical fights and performing poorly in school. JA 601.

Although California relies heavily on the Gentile survey, Pet. Br. 52-53, it has absolutely no relevance here. The survey examines only the purported connection between video game violence and "aggressive behavior" or "physical aggression" towards third parties. Pet. Br. 53. It does not study, and says nothing about, the psychological or neurological harm allegedly caused to those who play violent video games, which is the only interest that California defended below and thus is the only interest that is properly before this Court. Pet. App. 24a.

Even if the Gentile survey were relevant, it simply does not say what California says it does. California states that the survey "suggest[s] a causal connection between playing violent video games and aggressive behavior." Pet. Br. 53. It does no such thing. The survey makes absolutely no finding that exposure to violent video games leads to physical aggression. To the contrary, it explicitly cautions against making that inference: "It is important to note . . . that this study is limited by *its correlational nature*. *Inferences about causal direction should be viewed with caution*." JA 638 (emphasis added); see also JA 632-33 ("Are young adolescents more hostile and aggressive because they expose themselves to media violence, or do previously hostile adolescents prefer violent media? Due to the correlational nature of this study, we cannot answer this question directly.").

Beyond that, the Gentile survey is rife with methodological flaws that undermine even the suggested correlation. For example, the measures of

"aggressive behavior" that Gentile employed are highly suspect. Having an argument with a teacher – without any further exploration into the nature of the event – does not even suggest violent or aggressive behavior. And simply asking students whether they had been in a fight – again, without any further analysis of the event – is not a valid indicator for violent or aggressive behavior.[3]

Additionally, there are many factors that may influence youth violence or aggressive behavior, including: family violence, antisocial personality traits, and association with delinquent peers. *See* Herrenkohl et al., *Risk Factors for Violence and Relational Aggression in Adolescence,* 22 Journal of Interpersonal Violence 386 (2007); *see also* Savage,

---

[3] The validity of the methodology for measuring aggression refers to whether the methodology has been proven reliable at predicting actual aggression in the real world. Kutner & Olson, GRAND THEFT CHILDHOOD 69, 71-74 (Simon & Schuster 2008). Well-validated measures include those that directly measure specific physically or verbally aggressive behaviors toward another person (hitting, kicking, insults, etc.); crime data; or clinical scales that have been empirically shown to relate to real-world physical aggression or violence (such as the Child Behavior Checklist, p. 31, below). Ferguson & Kilburn, *The Public Health Risks of Media Violence: A Meta-Analytic Review*, Journal of Pediatrics 759, 760 (2009). Poorly validated measures are those that are not standardized or have not proven to have any reliability in predicting actual aggression. *Id.*; *see* Grimes et al., MEDIA VIOLENCE AND AGGRESSION: SCIENCE AND IDEOLOGY 76-78 (Sage 2008) (describing how definition and measurement of "aggression" in many media effects studies have been "exercises in abstraction" without any "coherent protocol of measurement that is predictive of behavior").

The Role of Exposure to Media Violence in the Etiology of Violent Behavior: A Criminologist Weighs In, 51 American Behavioral Scientist 1123, 1127 (2008) ("A focus on media violence literature, where we might find some correlations in a subset of studies, would lead to an exaggerated view of the importance of media violence in the etiology of violent behavior if we ignore the empirical evidence on other individual factors and situational factors."). Because Gentile's survey failed to control for, or even consider, those other variables, its conclusion that there is a correlation between video games and hostility to third parties lacks scientific grounding.[4] In fact, controlling for gender alone removes most of the variance from which Gentile finds a correlation. Ferguson, *Blazing Angels or Resident Evil? Can Violent Video Games Be a Force for Good?*, 14 Review of General Psychology 74-75 (2010). In other words, the correlation Gentile claims to find is equally explainable by the effect of gender: boys tend to play more violent video games and tend to be more aggressive. *Id.*

---

[4] Overlooking "third" variables is a common flaw of studies claiming to find a correlation between violent video game play and aggression. *E.g.,* Ferguson et al., *Violent Video Games and Aggression*, Criminal Justice and Behavior 312 (2008) (explaining "sparse research on violent video games often overlooks 'third' variables," such as family environment and innate aggression); *see also* Freedman, MEDIA VIOLENCE AND ITS EFFECT ON AGGRESSION: ASSESSING THE SCIENTIFIC EVIDENCE 130-133 (Univ. of Toronto Press 2002) (recognizing "many factors" could produce the "weak" correlations between media violence and aggression researchers claim to have found).

Second, California points to a 2004 study of 130 college students by Craig Anderson. Pet. Br. 53 (citing JA 479, 493-94). That study measured the blood pressure of students before, during, and after playing selected video games and had students take a "word completion" test after playing selected video games. JA 497. Based on the resulting measurements, Anderson concluded that the students' blood pressure increased while playing certain video games he labeled "violent" and that game play "increase[d] . . . the accessibility of aggressive thoughts." JA 507.

The Anderson study is no help to California, because it does not show that a rise in students' blood pressure has any relationship to whether violent video games cause psychological or neurological harm. Nor does California show how "aggressive thoughts" leads to psychological harm.[5]

Laboratory experiments, like Anderson's, that measure aggression immediately following the playing of a video game are common in the field of media effects research. *See generally* Kutner & Olson, *supra*, at 73-74. And like Anderson's, these experiments rely on proxies for *real* aggressive or violent behavior, such as the participants' willingness to administer blasts of white noise against an unseen (and non-existent opponent). Freedman, *supra*, at

[5] Both California and Senator Yee claim there is a connection between violent video game play and "aggressive thinking." Pet. Br. 52; Yee Br. 11, 18, 26. But preventing "aggressive thinking" is not a constitutionally legitimate state interest. *Free Speech Coalition*, 535 U.S. at 253.

60-63. The problem is that the proxies bear no relationship to whether someone is going to act aggressively or violently in the real world. Kutner & Olson, *supra*, at 73-74.[6] Similarly, giving participants words with blank spaces and evaluating whether they make "aggressive" or "non-aggressive" words with the letters they fill in (*i.e.*, "explo_e" could be completed as "explore" or "explode"), as Anderson did in his experiment, JA 496, has no known validity for measuring aggressive behavior (or even aggressive thinking).[7]

Third, California points to a 2004 study of fourth and fifth-grade students by Jeanne Funk, and claims it "found that playing violent video games was correlated with lower empathy as well as stronger pro-violence attitudes." Pet. Br. 53 (citing JA 705-06). But the Funk study specifically disclaimed any proof of causality. JA 730. As Funk admitted, the children in her study whose scores indicated lower empathy or stronger pro-violence attitudes may simply have been drawn to violent video games. *Id.* Moreover, the small sample size – just 150 children – and the failure to control for or consider any other variables undermine even the study's tentative conclusion of a

---

[6] *See also* Ritter & Eslea, *Hot Sauce, Toy Guns and Graffiti: A Critical Account of Current Laboratory Aggression Paradigms*, 31 Aggressive Behavior, 416-18 (2005) (summarizing problems with laboratory aggression paradigms).

[7] California also cites (Pet. Br. 56), without any discussion, other articles by Anderson that the district court and the court of appeals considered and rejected. Additionally, California cites (*id.* at 54) an article summarizing a meta-analysis that Anderson conducted in 2004. But that study contained "readily admitted flaws." Pet. App. 29a.

correlation between violent video games and pro-violence attitudes.

B. The Additional Studies Cited By Senator Yee Do Not Support California's Ban On The Sale And Rental Of Violent Video Game Sales To Minors.

Senator Yee's brief boldly declares that "science confirms that violent video games are harmful to minors." Yee Br. 10. But the studies he discusses do not show that.

Senator Yee leans heavily on a one-page statement by some researchers, who did not join his amicus brief. Yee Br. 11. That statement focuses on whether violent video games increase the likelihood of "aggressive behavior," which is the interest that California disclaimed below. Pet. App. 24a. With respect to the interest that California defended below – whether violent video games cause psychological or neurological harm to minors – the statement offers only one line at its tail end expressing concern about aggressive "thinking," aggressive "feelings," desensitization, and a decrease in "pro-social" behavior. But if the First Amendment means anything, it means government cannot ban speech to stop thoughts or feelings, and certainly not to promote "pro-social" behavior.

Aside from his reliance on the one-page statement of scholars, Senator Yee refers to "recent research," "new data," and "hundreds of studies" regarding the effects of violent video games. Yee Br.

5, 6. But there rarely are citations in Senator Yee's brief to support these broad assertions.[8]

Read carefully, the "recent research" and "new data" that Senator Yee offers boils down to: (1) a meta-analysis conducted by Craig Anderson, (2) a book co-authored by Anderson and Douglas Gentile, (3) certain purported "longitudinal studies," (4) broad policy statements of the American Academy of Pediatrics and the American Psychological Association, and (5) a few neuroscience studies. None of these sources provides substantial evidence that violent video games cause psychological or neurological harm to minors or lead to violent, aggressive, or antisocial behavior in minors.[9]

1. Anderson Meta-analysis. This recent study is labeled a "meta-analysis" of video game violence research. Anderson et al., *Violent Video Game*

---

[8] At times, Senator Yee does reference specific books, but fails to provide any substantiating internal page cites. *E.g.*, Yee Br. 17 & n.20.

[9] Senator Yee also cites an "upcoming publication" by Anderson and Gentile that supposedly "contemplate[s] the effects of playing video games" by "discuss[ing]" theoretical perspectives. Yee Br. 17, n.22. This source is not yet publicly-available, and Senator Yee has not shared it with the Court or the parties. Additionally, Senator Yee refers to some studies that supposedly show a "negative correlation" between school performance and time spent playing video games, Yee Br. 12, n.7, 19-20, and the addictive potential of video games, *id.* at 18-19. These studies concern *all* video games, not the subset of video games that California seeks to regulate. And the poor school performance and video game addiction that the studies supposedly document are not interests that California advances for its regulation.

Effects on Aggression, Empathy and Prosocial Behavior in Eastern and Western Countries: A Meta-Analytic Review, 136 Psychological Bulletin 151 (2010). "Meta-analysis" is a research technique that merges the results of many studies on a particular topic using statistical analysis.

The accuracy and usefulness of this tool necessarily depends, however, on the choice and quality of the studies that are merged for analysis, and the "end-product will never be better than the individual studies that make up the meta-analysis."[10] Anderson's study is an example of how a meta-analysis can simply compound the methodological flaws in the underlying studies.

For example, Anderson's meta-analysis combines studies that used methods for measuring aggression that have not been proven to be valid. Ferguson & Kilburn, *Much Ado About Nothing: The Misestimation And Overinterpretation of Violent Video Game Effects in Eastern and Western Nations: Comment on Anderson et al.*, 136 Psychological Bulletin 174, 175-76 (2010). By incorporating those studies into his analysis, Anderson replicated their methodological flaws in his meta-analysis, severely eroding the reliability of its findings.

---

[10] Gliner et al., *Meta-Analysis: Formulation and Interpretation*, 42 Journal of the American Academy of Child and Adolescent Psychiatry 1376-79 (2003). *See* Olson, *Media Violence Research and Youth Violence Data: Why Do They Conflict*, 28 Academic Psychiatry 144, 147-48 (2004) (discussing meta-analyses and concluding that studies are frequently combined in a manner that renders the results ineffective for use by policymakers).

Additionally, the process by which Anderson selected the studies for inclusion in the meta-analysis casts serious doubt on the results. Anderson reasonably included some unpublished studies in his meta-analysis given the risk of publication bias in the field of violent video game effects research.[11] But the process by which Anderson selected unpublished studies – he included his own unpublished work and the work of others whose conclusions mirror his, and excluded a wealth of unpublished studies from a contrary perspective – injected more, not less, bias into the analysis. Ferguson & Kilburn, *supra*, at 175.

Notably, Senator Yee fails to mention that the methodology of Anderson's meta-analysis was resoundingly criticized in the very same issue of the journal in which the meta-analysis was first published. Ferguson & Kilburn, *supra*.[12]

---

[11] The problem of publication bias in meta-analytic research – also termed the "file drawer problem" – is the recognition that the research published in scholarly journals does not represent all of the existing research on video game effects. Kutner & Olson, *supra*, at 81-82. It is generally recognized that articles with positive results (i.e., studies purporting to find a relationship between video game violence and harm) are selected for publication more often than articles which report negative results. *Id.*; Ferguson, *Evidence for Publication Bias in Video Game Violence Effects Literature: A Meta-Analytic Review*, 12 Aggression and Violent Behavior 470, 473 (2007). There are, however, accepted statistical methods for estimating and accounting for publication bias in meta-analytic research.

[12] Along with some of his co-authors, Anderson responded to the criticism of his meta-analysis. *See* Bushman et al., *Much Ado About Something: Violent Video Game Effects and a School*

Leaving the methodological flaws aside, Anderson's meta-analysis does not support Senator Yee's sweeping claims that it contains "definitive findings" and "unequivocal evidence" that "prove[s]" playing violent video games increases aggressive thoughts and behavior. Yee Br. 26, 28. That is because the estimated "effect size" between playing violent video games, on the one hand, and aggressive behavior, on the other, that Anderson identified is minimal. Anderson et al., *supra*, at 170. An "effect size" estimate represents the proportion of shared variance between two variables. It is, roughly speaking, the degree to which one variable can predict the other improving upon chance alone. For example, an effect size of 1% means that knowing variable x (playing violent video games) for an individual would be 1% better than chance alone in predicting whether that individual was likely to engage in aggressive or violent behavior. In contrast, an effect size of 100% means that the variable is a fully accurate predictor.

In his meta-analysis, Anderson concedes that the estimated effect size between playing violent video games and aggressive behavior is "small," specifically, 0.152 or 2.31%. Anderson et al., *supra*, at 170. Thus, the effect size that Anderson himself calculates – far

---

of Red Herring: Reply to Ferguson and Kilburn, 136 Psychological Bulletin 182 (2010). The response, however, repeats many of the same claims made in the Anderson meta-analysis and relies on the same erroneous assertions – such as the claim that video game violence effects are as strong as effects found in medical research – that have been debunked in the scholarship. *See* footnote 13, below.

from being a significant "causal risk factor," Yee Br. 26 – means that playing violent video games is only 2.31% better than chance alone at predicting whether that individual will engage in aggressive behavior.[13] And even that insignificant effect size is likely inflated because Anderson's study did not control for well-accepted risk factors for aggressive behavior, such as the influence of peers and family. Ferguson & Kilburn, *supra*, at 177.

Finally, other meta-analytic research that incorporated studies with valid and reliable methodologies, properly accounted for publication bias, and controlled for "third" variables have found little evidence that violent video games cause psychological harm (or any other harm) to minors.

---

[13] Even a lay examination of Anderson's small effect size calls into question Senator Yee's assertion that the relationship between media violence and aggression is "nearly as strong" as the relationship between cigarette smoking and lung cancer, Yee Br. 17. *See*, *e.g.*, American Cancer Society, Smoking and Cancer Mortality Table, available at http://ww2.cancer.org/docroot/PED/content/PED_10_2X_Smoking_and_Cancer_Mortality_Table.asp (listing smoking as the cause of 87% of lung cancer deaths among men and 70% among women). Indeed, scholars long ago assessed the asserted link between media effects and smoking research, concluded it was grossly overinflated, and conclusively debunked it. *E.g.*, Block & Crain, Comment, *Omissions and Errors in "Media Violence and the American Public*," 62 American Psychologist 252 (2007) (criticizing 2001 Anderson article making this assertion as based on "incorrectly calculated" data); Ferguson, *Is Psychological Research Really as Good as Medical Research?*, 13 Review of General Psychology 130 (2009) (recognizing flawed calculations and cautioning against making such comparisons between psychological and medical research).

For example, in a 2009 study published in the Journal of Pediatrics, Dr. Christopher Ferguson and Dr. John Kilburn conducted a meta-analytic review of studies that considered the impact of violent media on aggressive behavior. They relied on studies that used well-validated measures for assessing aggressive behavior, properly corrected for publication bias, and controlled for well-accepted risk factors for aggressive behavior. Ferguson & Kilburn, *Public Health Risks, supra*, at 759-60. The results suggest that the overall effect for exposure to media violence (both television and video game violence) was less than 1%. *Id.* at 761. Thus, the authors concluded that the results of their study "do not support the conclusion that media violence leads to aggressive behavior." *Id.* at 759.[14]

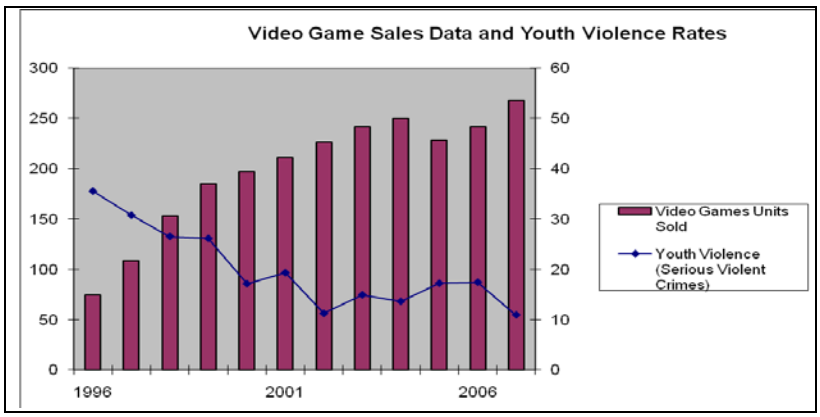
In another recent meta-analytic study, Dr. John Sherry concluded that while there are researchers in the field who "are committed to the notion of powerful effects," they have been unable to prove such effects; that studies exist that seem to support a

---

[14] Dr. Ferguson has published two other recent meta-analytic studies that similarly found no relationship between playing violent video games and aggressive behavior. *See* Ferguson, *The Good, The Bad and The Ugly: A Meta-Analytic Review of Positive and Negative Effects of Violent Video Games*, 78 Psychiatric Quarterly 309 (2007) (surveying articles published between 1995 and April 2007 and finding "no support for the hypothesis that violent video game playing is associated with higher aggression"); Ferguson, *Evidence For Publication Bias, supra*, at 480 (concluding that existing literature "has not provided compelling support to indicate either a correlational or causal relationship between violent video game play and actual aggressive behavior").

relationship between violent video games and aggression but other studies show no such relationship; and that research in this area has employed varying methodologies, thus "obscuring clear conclusions." Sherry, *Violent Video Games and Aggression: Why Can't We Find Effects?*, Mass Media Effects Research: Advances Through Meta-Analysis 231, 232 (2007); see also Sherry, *The Effects of Violent Video Games on Aggression: A Meta-Analysis*, 27 Human Communication Research 409-31 (2001). Although Dr. Sherry "expected to find fairly clear, compelling, and powerful effects," based on assumptions he had formed regarding video game violence, he did not find them. Sherry, *Violent Video Games, supra*, at 231, 245. Instead, he found only a small relationship between playing violent video games and short-term arousal or aggression and further found that this effect lessened the longer one spent playing video games. *Id.* at 243-45.

Such small and inconclusive results prompted Dr. Sherry to ask: "[W]hy do some researchers continue to argue that video games are dangerous despite evidence to the contrary?" *Id.* at 244. Dr. Sherry further noted that if violent video games posed such a threat, then the increased popularity of the games, would lead to an increase in violent crime. *Id.* But that has not happened. Quite the opposite, during the same period that video game sales, including sales of violent video games, have risen, youth violence has dramatically declined.



(Source: Ferguson & Olson et al., *Violent Video Games, Catharsis Seeking, Bullying, and Delinquency: A Multivariate Analysis of Effects,* Crime & Delinquency 5 (2010))

2. Anderson and Gentile Book. Senator Yee touts a "recent book" (Yee Br. 16-17), co-authored by Anderson and Gentile, that asserts there are "reasons to expect" larger effects from exposure to violent video games because of their interactive nature. Anderson, Gentile, & Buckley, VIOLENT VIDEO GAME EFFECTS ON CHILDREN AND ADOLESCENTS: THEORY, RESEARCH, AND PUBLIC POLICY 135 (Oxford Univ. Press 2006). But that assertion rests on the same old research of Anderson and Gentile that has been rejected as fundamentally flawed by every court that has considered it. Pet. App. 29a, 64a; *see, e.g.*, *Blagojevich*, 404 F. Supp. 2d at 1063 ("Dr. Anderson also has not provided evidence to show that video games . . . are any more harmful than violent

television, movies, internet sites or other speech-related exposure.").[15]

3. Longitudinal Studies. A longitudinal study examines a subject on several occasions over an extended period of time. *See* Kutner & Olson, *supra*, at 68-69. Both Anderson and Gentile (the main proponents of the idea that violent video games have harmful effects on minors) acknowledged in the record below that "there is a 'glaring empirical gap' in video game violence research due to 'the lack of longitudinal studies'" (Anderson) and that therefore "longitudinal research is needed" (Gentile). Pet. App. 28a, 30a.

Senator Yee claims that this gap has now been closed: according to Senator Yee, longitudinal studies of violent video games have been done and have proven harmful effects. Yee Br. 26. But Senator Yee provides no citations to support this proposition.

Amici are aware of one recent study of students in the United States and Japan that Anderson has described as "longitudinal" data that "confirm[s]" that playing violent video games is an "important causal risk factor for youth aggression." Anderson et al., *Longitudinal Effects of Violent Video Games in Aggression in Japan and the United States*, 122 Pediatrics 1067 (2008). But there is nothing "longitudinal" about this study. Rather than studying participants multiple times over extended

[15] Anderson admitted in his testimony in *Blagojevich* that his previous studies did not find greater effects for video game violence than other forms of media. JA 1263.

periods, it surveyed participants only twice and with only a few months lag in between. Additionally, the flaws that taint Anderson's other research (*e.g.*, failing to control for "third" variables and using measures of aggression that have not been proven reliable) recur in this study. Finally, Anderson's sweeping assertion of a causal connection is belied by the study's insignificant effect sizes (between .152 and .075, or 0.5% and 2.3%).[16]

4. Policy Statements. Senator Yee cites policy statements of two organizations, the American Academy of Pediatrics and the American Psychological Association, that violence in the media generally is a risk to minors. Yee Br. 10-12. But these pronouncements indict violence in *all* media, not just video games, and thus, if acted upon, would open the door to sweeping governmental restrictions on speech in films and on the Internet that even California does not propone.

Further, broad organizational pronouncements, like those in the policy statements that Senator Yee cites, are not based on a serious analysis of the

---

[16] Anderson's article in Pediatrics on the purported longitudinal study of students in the United States and Japan also states that he had conducted a previous longitudinal study. *Aggression in Japan and the United States*, *supra*, at 1068 (citing Anderson, Gentile, & Buckley, *supra*). But that study is not longitudinal either because it measured students at only two points during a single school year. It also reported an insignificant effect size (.13, or 1.7%), which would likely have shrunk even further if "third" variables had been controlled. Anderson, Gentile, & Buckley, *supra*, at 104 (Table 6.3).

relevant scientific evidence. See, e.g., Freedman, *supra*, at 9 ("Although they have all made unequivocal statements about the effects of media violence, it is almost certain that not one of these organizations conducted a thorough review of the research. They have surely not published or made available any such review."). The lack of any detailed analysis underpinning the statements is illustrated by (a) the American Academy of Pediatrics' assertion that "*[m]ore than 3500 research studies* have examined the association between media violence and violent behavior; all but 18 have shown a positive relationship," American Academy of Pediatrics, *Media Violence*, 108 Pediatrics 1222 (2001), emphasis added (cited at Yee Br. 11), and (b) an assertion in a 2000 joint statement of medical and psychological groups that "*well over 1000 studies* . . . point overwhelmingly to a causal connection between media violence and aggressive behavior in some children," JA 378, emphasis added (quoted at Pet. Br. 44). The rub is that there have not been over 3500 – or even over 1000 – scientific studies done on this topic. And the studies that have been conducted do not reach the uniform or "overwhelming" conclusion that the organizations claim they do. Freedman, *supra*, at 9; *see also* Kutner & Olson, *supra*, at 78. Finally, it is telling that the citations in the policy statements on which Senator Yee relies are to the flawed studies that were incorporated into Anderson's meta-analysis.

5. Neuroscience Research. California's ban on the sale and rental of violent video games to minors is based on an assumption that "[e]xposing minors to depictions of violence in video games . . . makes those

minors more likely . . . to experience a reduction of activity in the frontal lobes of the brain." Pet. App. 8a. In both the trial court and the court of appeals, California relied on research by William Kronenberger that purported to identify a connection between violent video games and altered brain activity using functional magnetic resonance imaging ("fMRI") technology. Pet. App. 31a. But every single court to review Kronenberger's fMRI research, including the courts below, have found no such connection. *Id.*; *See, e.g., Blagojevich*, 404 F. Supp. 2d at 1063-65; *Granholm*, 426 F. Supp. 2d at 653. California has now abandoned all reliance on Kronenberger's fMRI research or any other fMRI study.

Senator Yee, however, invokes Kronenberger's fMRI research, as well as a handful of other neuroscience articles, claiming that they show "a critical link" between virtual violence and altered brain functioning. Yee Br. 24. They do no such thing.

To begin with, Senator Yee fails to acknowledge the intense debate in the scientific community, widely reported in both the academic and popular press, regarding whether fMRI technology is being misused and its results being exaggerated. *See, e.g.,* Lehrer, *Picturing Our Thoughts*, The Boston Globe, Aug. 17, 2008; Vul et al., *Puzzlingly High Correlations in fMRI Studies of Emotion, Personality, and Social Cognition*, 4 Perspectives on Psychological Science 274 (2009); *see also* Hotz, *The Brain, Your Honor, Will Take the Witness Stand*, The Wall Street Journal, Jan. 15, 2009 (reporting scholars' criticism that fMRI brain scans cannot be used as legal

evidence because they are "easily manipulated" and "can't be trusted yet"); Begley, *Of Voodoo and the Brain*, Newsweek, Jan. 31, 2009 (reporting scholars' claim that many published fMRI studies show "voodoo correlations," methods and analysis so poor that they must be redone); Begley, *Brain Imaging and (More) Voodoo, But Politer*, Newsweek, April 27, 2009 (asking "isn't it time the fMRI community came to grips with the growing criticism of its methods"); Hamilton, *False Signals Cause Misleading Brain Scans*, National Public Radio, July 7, 2009 (reporting "furious debate" as to whether flaws in statistical analysis have made fMRI results "appear stronger than they really are" and that "even the strongest defenders of fMRI acknowledge that there are problems"); Sanders, *Trawling the Brain*, ScienceNews, Dec. 19, 2009 (describing growing concern in scientific community as to fMRI's reliability and warning that "the singing of fMRI's praises ought to be accompanied by a chorus of caveats"); Logothetis, *What We Can Do and What We Cannot Do with fMRI*, Nature, June 2008 ("[F]undamental questions concerning the interpretation of fMRI data abound, as the conclusions drawn often ignore the actual limitations of the methodology.").

As many scholars have cautioned, fMRI studies of brain activation have inherent methodological issues that make them difficult to understand and interpret. In a typical fMRI experiment, a subject is placed in a tube-shaped machine (just like the one used for an ordinary MRI test), told to lie perfectly still and then to perform some experimental task, such as looking at an image and making a decision. Magnets detect

the ratio of the change between oxygenated and deoxygenated blood in a specific region of the brain. A complicated statistical analysis is then used to turn that signal into an "activation" in the brain. The underlying assumption is that active neurons require more oxygen to work and, therefore, more oxygen means greater neuronal activity.

A central problem, however, is that while fMRI studies may indicate areas of the brain that decrease in activation during a task, deactivations that may occur simultaneously are not well understood and, thus, are only tentatively discussed in published fMRI studies. *See, e.g.*, Kalbfleish, *Getting to the Heart of the Brain: Using Cognitive Neuroscience to Explore the Nature of Human Ability and Performance*, 30 Roeper Review 165 (2007). Additionally, it is not yet understood how brain activation is influenced by neural development in children. *Id.*

Further, because fMRI studies depend on statistical analysis, errors in the method or procedure of that analysis may undermine the reliability of the results. *See* Vul et al., *supra*. A recent study surveyed 55 fMRI studies on brain activation and emotion, personality, and social cognition and found that, in about half of these studies, the methods and analysis were so flawed that the results were "entirely spurious correlations." *Id.* at 274.

On top of the inherent limitations of fMRI research generally, the particular fMRI studies that Senator Yee cites – three studies conducted in part by Kronenberger and one study conducted by Rene Weber – have their own specific flaws and their

results are so inconclusive that they do not remotely support the asserted link between playing video games and altered brain functioning.

The Kronenberger articles – each of which expressly states that it was funded by a grant from the anti-media violence Center for Successful Parenting[17] – set forth findings that are so qualified as to render them meaningless.

In the most recent Kronenberger study, *see* Yee Br. 21 (citing Hummer et al., *Short-Term Violent Video Game Play by Adolescents Alters Prefontal Activity During Cognitive Inhibition*, 13 Media Psychology 136 (2010)), forty-five adolescents were divided into two groups, with one group playing a car racing video game and the other group playing a shooting game. After thirty minutes of play, each participant was subjected to an fMRI scan, during which they were required to press a button for each letter that was displayed, except for the letter x, for which there was no response. Looking at the resulting data, Kronenberger and his co-authors made the broad conclusion that there were lower activity levels for the shooting game in regions of the brain "*thought to be involved* in cognitive inhibition." *Id.* at 147 (emphasis added).

As a threshold matter, this study cannot possibly support California's claim that violent video game

---

[17] The Center for Successful Parenting is a group that describes itself as "an advocate of eliminating children's exposure to violence and sex in media venues." Center for Successful Parenting, http://www.sosparents.org.

cause harm to minors because a decrease in activity in an area of the brain is not necessarily a negative effect and, instead, may indicate nothing more than expertise in a practiced task. *See, e.g.*, Poldrack et al., *The Neural Correlates of Motor Skill Automaticity*, 25 Journal of Neuroscience 5356 (2005). The mere fact that the brain changes as it responds to stimuli does not prove that the stimuli are harmful.

Additionally, the study's own express qualifications undercut its findings. The authors admitted that the two video games chosen differed in ways other than the presence or absence of violent content and thus created "potential confounds" for the results. Hummer et al., *supra*, at 149.

The two other studies conducted in part by Kronenberger did not consider exposure to video games specifically, just "media violence" generally, and thus do not support California's claim that violent *video games* cause harm to minors. See Kronenberger et al., *Media Violence Exposure and Executive Functioning in Aggressive and Control Adolescents*, 61 Journal of Clinical Psychology 725, 726 (2005) (cited at Yee Br. 21); Mathews et al., *Media Violence Exposure and Frontal Lobe Activation Measured by Functional Magnetic Resonance Imagine in Aggressive and Nonaggressive Adolescents*, 29 Journal of Computer Assisted Tomography 287 (2005) (cited at Yee Br. 22). More importantly, each study is expressly announced to be inconclusive. For example, in their study of media violence and "executive functioning," Kronenberger and his colleagues explicitly warn that the results are

only "preliminary" and "should be viewed with caution." Kronenberger et al., *supra*, at 726; *see also* Mathews et al., *supra,* at 291-92 (explaining study's "limitation" is that it "did not evaluate other brain regions involved in emotional control"; authors recommended "further study" to evaluate "the entire system involved in aggressive behavior").

Senator Yee fares no better in his reliance on the Weber fMRI study. Yee Br. 24 (citing Weber et al., *Does Playing Violent Video Games Induce Aggression? Empirical Evidence of a Functional Magnetic Resonance Imaging Study*, 8 Media Psychology 39 (2006)). The Weber study involved thirteen adult men who were observed playing a supposedly violent video game for an hour. The study examined brain activity patterns that were similar to those seen in a previous study of individuals "imagin[ing] scenarios involving aggressive behavior." *Id.* at 42-43, 53. What those patterns mean, however, is not explained by the science. Nor do the patterns demonstrate any real-world connection between the "imagin[ings]" and violence or harmful neurological effect. And Senator Yee fails to explain how this limited study of a small pool of adult men substantiates the sweeping assertions about minors' neurological functioning on which California's law depends.[18]

---

[18] In his discussion of the claimed effects of video games on the brain, Senator Yee also cites two studies that do not involve fMRI technology but instead measure brain waves with electrodes. Yee Br. at 23-24. Those studies are of no utility to California either.

C. California And Senator Yee Ignore The Large Body Of Empirical Evidence That Shows No Causal Connection, Or Even A Correlation, Between Violent Video Games And Harm To Minors.

California and Senator Yee ignore a wealth of recent empirical evidence disabusing the notion that violent video games are harmful to minors. Here is just a snapshot of that body of scholarship:

- A study of 603 Hispanic youths (ages ten to fourteen), recently published in The Journal of Pediatrics, examined various risk

---

The first, a study of adult men by Anderson and his colleagues, does not even purport to analyze violence in video games – it just analyzes video games generally. *See* Bailey et al., *A Negative Association Between Video Game Experience and Proactive Cognitive Control*, 47 Psychophysiology 1 (2009). It compared brain wave patterns of "high gamers" (over 40 hours per week spent playing video games) with "low gamers" (less than two hours per week). Expressly qualifying their findings, the authors stated it was "impossible" to know whether differences they observed between the two groups were caused by video games or "some other factor." *Id.* at 8.

The second study measured brain waves of 39 male college students during an experiment in which "noise blasts" were administered and violent and non-violent images were shown. Bartholow et al, *Chronic Violent Video Game Exposure and Desensitization to Violence: Behavioral and Event-Related Brain Potential Data*, 42 Journal of Experimental Social Psychology 532 (2006). The authors claim their results "are the first to link media violence exposure and aggressive behavior to brain processes *hypothetically* associated with desensitization" to violence. *Id.* at 532 (emphasis added). But even Senator Yee concedes that the results of the study are only "theoretically" related to aggression. Yee Br. 23.

factors for youth violence, including video game violence, delinquent peer association, family conflict, depression, and others. Ferguson et al., *A Multivariate Analysis of Youth Violence and Aggression: The Influence of Family, Peers, Depression, and Media Violence*, 155 Journal of Pediatrics 904 (2009). The children listed television shows and video games and rated how often they viewed or played the media – a reliable and valid method of evaluating violent media exposure. *Id.* at 905. The children were then evaluated using the Child Behavior Checklist, a well-researched and well-validated tool for measuring behavioral problems in children and adolescents. *Id.* A statistical analysis of the results revealed that exposure to video games had a negligible effect size and was not predictive of youth violence and aggression. *Id.* at 906.

- A study of 1,254 seventh and eighth-grade students examined the influence of exposure to violent video games on delinquency and bullying behavior. Ferguson & Olson et al., *supra*. The Entertainment Software Ratings Board ratings were employed as a standardized measure of participants' exposure to violence in video games. *Id.* at 8. The study applied a multivariate statistical method that considered other factors that might be predictive of aggressive behavior (such as level of parental involvement, support from others, and stress). *Id.* at 7-8. This study did

not use abstract measures of aggression, but instead focused on specific negative behaviors such as delinquency and bullying. *Id.* at 8, 9. A statistical analysis revealed insignificant effect sizes between exposure to violent video games and delinquency or bullying. *Id.* at 11, 12. The authors accordingly concluded that exposure to such games was not predictive of delinquency or bullying. *Id.*

- A study of 213 participants examined the influence of violent video game play on aggressive behavior. Williams & Skoric, *Internet Fantasy Violence*, 72 Communication Monographs 217 (2005). The 213 participants were divided into a 75-person treatment group that played a single game, Asheron's Call 2, a type of "massively multi-player online role-playing game" that is "highly violent" and has "a sustained pattern of violence," for at least five hours over a one-month period, and a 138-person control group that did not play the game. *Id.* at 221, 224. Participants then completed self-reported questionnaires that included a range of demographic, behavioral, and personality variables. *Id.* at 225. Aggression-related beliefs were measured according to the Normative Beliefs in Aggression general scale, a well-validated scale for measuring beliefs about the acceptability of aggression, and aggressive social interactions were measured using specific behavioral questions. Both measurement techniques had been successfully used in previous studies of

violent television and video game effects. *Id.* The results of this study found no effects associated with aggression caused by playing violent video games. *Id.* at 228.

These studies are just the tip of the iceberg.[19] They rate barely a mention in Senator Yee's brief,

---

[19] See Ferguson & Rueda, *The Hitman Study: Violent Video Game Exposure Effects On Aggressive Behavior, Hostile Feelings And Depression*, 15 European Psychologist 99 (2010) (study of 103 young adults for causal effects of video game playing on aggressive behavior, hostile feelings, and depression; results found no evidence that short-term exposure to violent video games either increased or decreased aggressive behavior); Ferguson et al., *Personality, Parental, And Media Influences On Aggressive Personality And Violent Crime In Young Adults*, 17 Journal of Aggression, Maltreatment & Trauma 395 (2008) (study of 355 undergraduate students for potential contributors to violent crime; results indicated exposure to violent video games or television did not predict aggression); Baldaro et al., *Aggressive And Non-Violent Videogames: Short-Term Psychological And Cardiovascular Effects On Habitual Players*, 20 Stress and Health 203 (2004) (study of 22 "habitual, expert players" for short-term effects of violent video game play on several physiological and psychological indexes; results found no short-term increase in hostility or aggression); Colwell & Kato, *Investigation Of The Relationship Between Social Isolation, Self-Esteem, Aggression And Computer Game Play In Japanese Adolescents*, 6 Asian Journal of Social Psychology 149 (2003) (study of 305 twelve and thirteen-year-old Japanese students; results "suggest[ed] that the positive relation between playing computer games and aggression may simply be correlational and not causal; aggressive children like playing computer games, many of which are aggressive").

Importantly, additional studies have shown, in contradistinction to California's position, that playing video games, including violent games, can reduce aggression in adolescents and can have a positive impact on emotional health.

which disparages them as "alleged 'scientific studies'" that involved "small sample size, poor test conditions and chance." Yee Br. 27. That is wrong. The studies employed large sample sizes, long-standing and validated measures of aggression, and superior statistical controls. Ironically, the studies also include the work of researchers whom California and Senator Yee cite favorably. For example, as noted above, California relies on the research of Jeanne Funk. Pet Br. 53 (citing JA 705-06). But, in a separate study that California does not mention, Funk "fail[ed] to find" even a correlation between violent video games and aggressive emotions and behavior. *See* Funk et al., *Aggression and Psychopathology in Adolescents With a Preference for Violent Electronic Games*, 28 Aggressive Behavior 134 (2002). Notably, this second Funk study employed the Child Behavior Checklist, which is a better validated measure of aggression than measures utilized in the studies on which California and Senator Yee rely.

At minimum, the scholarship that California and Senator Yee ignore belies the notion that the "substantial evidence of causation" standard imposes an "insurmountable hurdle" on science or legislatures. Pet. Br. 52. These studies show

---

See, *e.g.*, Colwell & Kato, *supra*, at 149-58 (concluding that "the evidence actually supports a catharsis mechanism, that playing aggressive computer games may lead to lowered aggression"); Olson et al., *The Role Of Violent Video Game Content In Adolescent Development: Boys' Perspectives*, 23 Journal of Adolescent Research 55 (2008) (finding that boys use violent games to regulate emotions and channel anger).

unequivocally that the causation research can be done, and, indeed, has been done. The problem confronting California and Senator Yee thus is not the constitutional standard; it is simply their inability to meet that standard in this case because validated scientific studies prove the opposite, leaving no empirical foundation for the assertion that playing violent video games causes harm to minors.

CONCLUSION

For the foregoing reasons, the judgment of the court of appeals should be affirmed.

Respectfully submitted.

Michael C. Small
Katharine J. Galston
AKIN, GUMP, STRAUSS, HAUER & FELD LLP
2029 Century Park East
Suite 2400
Los Angeles, CA 90067
(310) 229-1000

Patricia A. Millett
Counsel of Record
AKIN, GUMP, STRAUSS, HAUER & FELD LLP
1333 New Hampshire Ave., NW
Washington, DC 20036
(202) 887-4000
pmillett@akingump.com

Attorneys for Amici Curiae

September 17, 2010

APPENDIX: LIST OF SCHOLARS WHO ARE SIGNATORIES TO AMICI CURIAE BRIEF

James A. Anderson, PhD
Professor
Department of Communication
University of Utah

Paul Ballas, DO
Medical Director, Green Tree School Clinic
Attending Psychiatrist, Friends Hospital

Martin Barker
Research Professor, Film & Television Studies
Aberystwyth University
UK

Dr. Jane Barnett
Department of Engineering and Information Sciences
Middlesex University
London, UK

Kevin M. Beaver
Associate Professor
College of Criminology and Criminal Justice
Florida State University

Frances P. Bernat, JD, PhD
Professor and Department Chair
Department of Behavioral Sciences
Texas A&M International University

Erik W. Black, PhD
Assistant Professor of Pediatrics and Educational Technology
Department of Pediatrics
University of Florida
College of Medicine

Nicole Paradise Black, MD
Clinical Assistant Professor
University of Florida

Bill Blake
Director of Research in Digital Humanities, English Department
University of Wisconsin-Madison

Jerald Block, MD

Ian Bogost
Associate Professor
Director of the Graduate Program in Digital Media
Georgia Institute of Technology

Walter R. Boot, PhD
Assistant Professor
Department of Psychology
Florida State University

Dr. Wolfgang Bösche
Technische Universität Darmstadt, Germany

Jeffrey E. Brand, PhD
Associate Professor
School of Communication and Media
Bond University, Gold Coast, Australia

Randy Brown
Chief Technology Officer
Virtual Heroes

Professor David Buckingham
Director, Centre for the Study of Children, Youth and Media
Institute of Education, University of London, UK

Dr. Jonathan Cabiria
Consulting Faculty, Psychology
Media Psychologist
Walden University

T. Atilla Ceranoglu, MD
Harvard Medical School

Isabelle D. Cherney, PhD
Professor of Psychology
Creighton University

Andrew Christopher
Professor and Co-Department Chair
Department of Psychology
Albion College

Mia Consalvo, PhD
Visiting Associate Professor
Massachusetts Institute of Technology

Filippo Cordaro
Postdoctoral Fellow
Department of Economic and Social Psychology
University of Cologne

Mark Christopher Coulson, BSc PgDip PhD AFBPsS
CPsychol ILTM
Principal Lecturer in Psychology
Department of Psychology
Middlesex University, London, UK

Francis G. Couvares
Professor of History and American Studies
Department of History
Amherst College

Ben DeVane
Assistant Professor, Digital Arts & Sciences
University of Florida

Jane Y. Douglas, PhD
Associate Professor
Warrington College of Business Administration
University of Florida

Kevin Durkin PhD
Professor of Psychology
University of Strathclyde
Glasgow, UK

Christopher J. Ferguson, PhD
Assistant Professor
Texas A&M International University

Stuart Fischoff, PhD
Emeritus Professor of Psychology
Cal State, Los Angeles and
Senior Editor, Journal of Media Psychology

James Alan Fox
Lipman Family Professor
School of Criminology and Criminal Justice
Northeastern University

Jonathan Freedman
Professor Emeritus of Psychology
University of Toronto

Todd Gitlin
Professor of Journalism and Sociology, and Chair, PhD
Program in Communications
Columbia University

Professor Jeffrey H. Goldstein
Research Institute for History and Culture
Utrecht University
Utrecht, The Netherlands

Dr. Simon Goodson
University of Huddersfield, UK

Tom Grimes
Professor
School of Journalism and Mass Communication
Texas State University

Karla Hamlen, PhD
Assistant Professor, Curriculum and Foundations
Cleveland State University

Richard D. Hartley
University of Texas at San Antonio

Dr. Bobby Hoffman
Assistant Professor
University of Central Florida

Stephen T. Holmes, PhD
Assistant Vice President for Academic Initiatives
University of Central Florida
Regional Campus Administration

Mizuko Ito
Professor in Residence
University of California, Irvine

James D. Ivory, PhD
Assistant Professor, Department of Communication
Virginia Polytechnic Institute and State University

M. Layne Kalbfleisch, MEd, PhD
Associate Professor
Educational Psychology & Cognitive Neuroscience
Krasnow Institute for Advanced Study & College of Education and Human Development
George Mason University

John C. Kilburn Jr.
Professor of Sociology & Criminal Justice
Department of Behavioral Sciences
Texas A&M International University

Roger J.R. Levesque, JD, PhD
Chair and Professor of Criminal Justice
Department of Criminal Justice
Indiana University

Jon Lewis
Professor
Department of English
Oregon State University

Mike Males, PhD
Senior Research Fellow
Center on Juvenile and Criminal Justice
San Francisco, California

Richard Maltby
Professor of Screen Studies
Flinders University, South Australia

Tara McPherson
Associate Professor
Editor, International Journal of Learning and Media
Critical and Gender Studies
School of Cinematic Arts
University of Southern California

Dawna-Cricket-Martita Meehan, PhD
Coordinator of School Mental Health Projects
Miami University's Center for School-Based Mental Health Programs

Ricardo Javier Rademacher Mena, PhD Physics
Futur-E-Scape, LLC Founder

Jean Mercer, PhD
Professor Emerita of Psychology
Richard Stockton College
Pomona, New Jersey

Stuart Moulthrop, PhD
Professor of English
University of Wisconsin-Milwaukee

Shane Murphy
Associate Professor In Psychology
Department of Psychology
Western Connecticut State University

Charles Negy
Associate Professor of Psychology
Department of Psychology
University of Central Florida

Cheryl K. Olson, ScD
Co-Director of the HMS Center for Mental Health and Media
Harvard Medical School

Hal Pashler
Professor
Department of Psychology and Program in Cognitive Science
University of California, San Diego
La Jolla, California

Ms. Sarah Pearson
University of Huddersfield, UK

Constance Penley
Professor, Department of Film and Media Studies Co Director, Carsey-Wolf Center for Film, Television, and New Media University of California, Santa Barbara

Julian Petley
Professor of Screen Media and Journalism
Brunel University
London, UK

Steven Pinker
Harvard College Professor of Psychology
Harvard University

Richard Rhodes
Author, Pulitzer Prize Recipient

Albert Rizzo, PhD
Associate Director, Institute for Creative Technologies
University of Southern California

Pamela B. Rutledge, PhD, MBA
Adjunct Professor; Director of the Media Psychology
Research Center
School of Psychology
Fielding Graduate University

Claudia E. San Miguel
Assistant Professor of Criminal Justice
Texas A&M International University

Joanne Savage, PhD
Associate Professor
Department of Justice, Law and Society
American University

Marcus Schulzke
PhD Candidate
Department of Political Science
State University of New York at Albany

Matthew Sharritt, PhD
President, Situated Research, LLC

John L. Sherry, PhD
Associate Professor
Department of Communication
Michigan State University

Marko M. Skoric, PhD
Wee Kim Wee School of Communication and Information
Nanyang Technological University
Singapore

Professor Ian Spence
Department of Psychology
University of Toronto

Constance Steinkuehler Squire
Assistant Professor, Curriculum & Instruction
University of Wisconsin-Madison

Pamela Stern
Learning Strategist
Agile Learning Solutions

Karen Sternheimer, PhD
Associate Professor (Teaching) of Sociology
University of Southern California

Kaveri Subrahmanyam, PhD
Professor
Department of Psychology
California State University, Los Angeles

Hakan Tuzun
Assistant Professor
Hacettepe University

Richard N. Van Eck
Associate Professor, Graduate Director, Instructional Design & Technology
University of North Dakota

Erik Henry Vick, PhD
School of Interactive Games and Media
Rochester Institute of Technology

Edward Vul, PhD
Assistant Professor of Psychology
Department of Psychology
University of California, San Diego

Dmitri Williams
Associate Professor
University of Southern California
Annenberg School for Communication and Journalism

Dr. Nick Yee
Member of Research Staff
Palo Alto Research Center

R. Michael Young, PhD
Associate Professor, Computer Science and Co-Director, Digital Games Research Initiative
NC State University

José P. Zagal, PhD
Assistant Professor
DePaul University