

## Comfortably Numb or Just Yet Another Movie? Media Violence Exposure Does Not Reduce Viewer Empathy for Victims of Real Violence Among Primarily Hispanic Viewers

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Continued debate exists regarding the impact of media violence exposure on viewers' thoughts and behaviors. One facet of this debate has focused on the possibility that viewing media violence may desensitize viewers to the suffering of others and reduce their empathy. In the current study, 238 mostly Hispanic, young adults were randomized to watch either a violent or nonviolent TV show. Participants also watched clips of either fictional victims of violence (i.e., movie clips) or clips of actual people being injured or killed. Participants were significantly more empathic of victims' suffering when they knew they were watching real violence rather than fictional violence. However, previous exposure to a violent or nonviolent TV show did not reduce empathy. These results suggest that, at least among a primarily Hispanic audience, viewers' processing of media depends upon whether they understand it to be real or fictional, and media violence does not necessarily reduce empathy to real-life violence.

*Keywords:* media violence, TV, mass media, desensitization, empathy

In 2011, the Supreme Court of the United States struck down a law in California attempting to ban violent video games (*Brown v. Entertainment Merchants Association*, 2011). Calling upon historically predominating ideas in psychology, California had argued exposure to violent media such as that in video games desensitized minors to violence, potentially making them more violent. The majority opinion of the Supreme Court disagreed, criticizing the research and finding it unconvincing (although dissenting court opinions found the research more credible). During the case, opposing groups of scholars filed amicus briefs both supporting and criticizing the California law and offering opposing pools of scholarship. As such, despite the claims of California and some scholars (e.g., Huesmann & Miller, 1994), the

issue of media violence remains as contentious as ever (Freedman, 2002; Grimes, Anderson, & Bergen, 2008; Olson, 2004).

The view that media violence is a potential cause of increased aggression is typically described within the framework of social-cognitive theory (Bushman & Anderson, 2009; Huesmann & Miller, 1994). As part of this view, media violence creates cognitive scripts that involve considering aggression as more acceptable while simultaneously reducing empathy toward victims of suffering. However, only a few studies have examined these mechanisms. Bushman and Anderson (2009), for instance, present two studies of desensitization; both found that playing violent video games in the lab or watching a violent movie in real life reduced helping behaviors. However, Ferguson and Dyck (2012) criticize these studies for their contrived nature and potential for demand characteristics. Specifically, the laboratory study involved a highly unnatural "fight" with stilted dialogue breaking out improbably in a psychology laboratory (just after one has played a violent video game), whereas the movie study did not carefully match movie conditions, and the confederate was apparently not "blinded" to the condition and may have behaved differently

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This article was published Online First October 29, 2012.

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across conditions. Furthermore, the participants in Bushman and Anderson's (2009) second study involving movies were not randomly assigned to experimental conditions. Thus, numerous confounds were introduced into their analysis both at the level of the participant and the movie condition. Hetsroni (2012) similarly notes significant gulfs between the methodology of TV violence studies more generally and real-life aggressive behaviors.

Among the first studies of desensitization were a series of studies conducted by Drabman and Thomas (1975, 1976). These studies laid the foundation for research on exposure to violent media and desensitization. Drabman and Thomas attempted to measure desensitization by exposing children in a treatment group to a violent film and children in a control group to either a neutral nonviolent film or no film at all. In their 1975 study, in the first experiment the violent film was a western film excerpt and the nonviolent control group watched no film. In the second and third experiments (and with the 1976 study), the violent treatment was an excerpt from a detective show and the nonviolent treatment was a baseball game clip. After the treatments were administered, the children were instructed to watch a TV set that supposedly broadcasted a live feed from another room, but the live feed was actually a prerecorded video. On the TV screen was a room with two younger children. The kids in the experiment were instructed to call for help if the two children on the live feed began to misbehave (fight). Drabman and Thomas found that children who watched the violent show took longer to call for help than those who watched either nothing or baseball; however, the media conditions were not well matched, and children may have thought the adults' decision to show them violence may have indicated approval for violence, thus setting up demand characteristics.

Other studies subsequently attempted to replicate the findings of Drabman and Thomas in various ways (e.g., Horton & Santogrossi, 1978; Molitor & Hirsch, 1994; Woodfield, 1988). Results from these studies generally were not supportive of Drabman and Thomas' results. Other research has found inconsistent results (Funk, Baldacci, Pasold, & Baumgardner, 2004) for different types of media. And some scholars have questioned the methodology of much of this work and its potential for demand charac-

teristics, the poor matching of media conditions, and selective interpretation of sometimes inconsistent results (Adachi & Willoughby, 2011; Freedman, 2002; Przybylski, Rigby, & Ryan, 2010; Savage, 2008). Concerns about previous studies focus around several issues discussed later in the article.

### **Poor Matching of Experimental and Control Conditions**

To ascribe any differences in outcome to a presumed cause, in this case violent content, experimental conditions must be matched carefully on variables other than violent content. For instance, some scholars have noted that, with video game research, competitiveness of games was a consistent confound with violence across almost all existing experiments (Adachi & Willoughby, 2011). Indeed scholars such as Freedman (2002) and Savage (2008) have noted that matching of media conditions in media violence studies has generally been substandard such that in most studies the conditions differed on variables other than violent content. In many studies, violent media conditions were more exciting than nonviolent conditions, for example. In fairness, selecting matching media conditions is historically very difficult. For instance, action movies and romances (as two genre examples) differ systematically on many levels other than simply violent content. Thus, finding media exemplars that are similar in excitement, engagement, theme, presence of female lead characters, dialogue, and so forth, but differ in violent content only is a daunting task. Nonetheless, clear causal attributions cannot be made so long as confounds exist in the literature as they currently do.

### **The Absence of Real-Life Applicability**

In most studies of desensitization, participants are exposed to media conditions, then presented with a contrived circumstance in which they may be asked to "help" a confederate on some issue. However, the close proximity of the media condition with a contrived "helping" task, particularly when many of those tasks improbably take place in psychological laboratories, raises the issue of potential demand characteristics. Bushman and Anderson's (2009)

laboratory study presents such an example, with a contrived scenario with poor dialogue that even the authors acknowledge was initially ineffective. Although the authors state that they improved the scenario with some revisions, it is unclear they did much more than reinforce demand characteristics. By contrast their field trial with moviegoers presents an improvement in that it allows for examination of behavior in a real-world setting. However, the authors do not offer up much information on their procedure, and it is likely that the scenario may have inadvertently differed by movie condition if the confederate was aware of which movie participants had attended, thus once again setting up demand characteristics. Further, the absence of random assignment in this field trial is a serious issue, given that those who decide to attend violent versus nonviolent films are likely to differ on many personal levels. Relevant to the point above, regarding matching of media conditions, Bushman and Anderson also compared attendees of an R-rated horror film (*The Ruins*) with those of a children's adventure movie (*Nim's Island*), introducing considerable confounds.

Thus, as it stands, the field has relied mainly on contrived laboratory or analog scenarios, which may introduce considerable demand characteristics. Relatively little research has examined the degree to which viewers of violent media may be desensitized to victims of *actual* violence in the real world. In other words, the important question seems to be whether viewers of violent media experience reduced empathy to the suffering of other actual people. At present, we do not believe that the research literature has adequately tackled this issue. Thus, there is clearly much room for new research that carefully controls media conditions and examines whether media violence exposure reduces empathy for victims of actual violence.

The current study is designed to supplement the existing literature by examining the reactions of participants to images of actual (rather than contrived) harm to humans after viewing violent TV shows in order to test the hypothesis that such shows desensitize viewers. Arguably past research has generally begun with the assumption that violent media is desensitizing. However, there are concerns that such assumptions may have brought on a "tail wags dog" effect (Ferguson & Dyck, 2012; Freedman,

2002) in which results were selectively interpreted so as to support the preexisting hypothesis. This may be particularly true where methodological flexibility issues (see Simmons, Nelson, & Simonsohn, 2011) allow researchers to select from a range of potential outcome variables, especially those which best fit their hypotheses, a problem which has been identified as serious in this field (Ferguson & Dyck, 2012; Freedman, 2002). In this case, we take an opposing approach and test the hypothesis that violent media is *not* desensitizing. By a careful analysis of effect sizes and certification that analytic methods were not altered owing to results and the presentation of multiple analytic methods to examine for consistency, our analyses will improve on those of past studies and effectively test potential null results. We thus have two related hypotheses. Hypothesis 1 holds that violent media will not reduce viewer empathy for victims of actual violence. Hypothesis 2 holds that violent media will not alter stress responses of viewers when viewing real scenes of violence.

## Method

### Participants

Participants were 238 college students from Texas A&M International University receiving extra course credit as an incentive for voluntary participation. There were 68 male participants accounting for 28.6% of the participant group and 170 female participants accounting for 71.4%. The age range of participants was 18 to 50 years, with an average age of 22 years ( $SD = 5.61$ ). In terms of ethnic frequency, 219 (92%) participants were Hispanic, 13 (5.5%) were White, 2 (0.8%) were Black, 3 (1.3%) listed as other, and there was 1 (0.4%) Asian participant.

### Materials

**TV episodes and violent clips.** For this study, participants were randomly assigned to one of six TV episodes. There were two types of TV episodes that a participant could be assigned to watch, namely violent and nonviolent. For each type, three TV episodes were selected as exemplars. Shows were chosen to be similar on variables other than violent content (e.g., recency, dramatics, network release, presence

of female characters, etc.). For the nonviolent category, the three TV shows chosen were *House*, *Pan Am*, and *Glee*. *House* is a medical drama revolving around the lead character solving medical cases. *Pan Am* is a drama that centers itself on a specific period of American history (1960s commercial jet age). *Glee* is a high-school drama in which the students frequently participate in singing and dancing. All three episodes were prescreened by the experimenters to ensure absence of violent content. For the violent exemplars, the three shows chosen were *Law and Order: Special Victims Unit*, *Once Upon A Time*, and *Bones*. *Law and Order: Special Victims Unit* is a crime drama that focuses on the cases of the detectives of the special victims unit, a unit dealing with sex crimes and crimes against minors. *Once Upon A Time* is a fantasy drama in which characters from popular fairy-tales (Snow-White, Rapunzel, Prince Charming) are transported into our modern world. Lastly, *Bones* is a crime drama that focuses on a forensic anthropologist. In *Bones*, the detectives attempt to solve cases using cadavers and bones of victims. All six shows feature a mixture of male and female lead characters.

Participants were also randomly assigned to watch one of two video clips after the TV show. There was a real-violence video clip that contained scenes of real violence (e.g., scenes of war, and violent injuries or deaths). Alternatively, other participants watched a video clip that featured fictional violence. This clip was designed to be matched as closely as possible in regards to the types of violence and graphicness also including scenes of war violence and violent deaths. The fictional and nonfictional clips were approximately equal in length (about 6 minutes). Each set of clips began with a written introductory statement informing the participants whether the violence they were about to watch was real or fictional.

A pilot test of university students not involved in the main study was used to examine the equality of the clips on violent content. Participants ( $n = 60$ ) were similar in composition to the main study (45% male, 91.7% Hispanic, mean age = 24.11,  $SD = 1.82$ ). Participants were randomized to watch either the real or fictional clips. Participants then rated the clips on violent content using a 5-point Likert scale. Results revealed no groups differences in

ratings of violence ( $t(58) = .49, p = .63$ , effect size  $r = .06$ ). With the effect size near to  $r = .00$ , this finding is unlikely due to Type II error, thus giving us confidence that the two clip conditions are well matched on violence level.

**Demographic questionnaire.** The demographic questionnaire contained questions regarding the basic demographic information of the participant. The information collected from this questionnaire included the participant's age, gender, ethnicity, place of birth, marital status, level of education, level of parents' education, and parents' marital status.

**Follow-up questionnaire.** The follow-up questionnaire was composed of four items that inquired about the TV episode that participants had just watched. For example, one item asks, "how exciting did you find the show." Answers ranged from 1 (not at all) to 5 (very much so). These items were reasonably consistent ( $\alpha = .71$ ) and were combined into a single enjoyment index. A fifth item asked about how violent the show appeared to be.

**Victim empathy (VE).** This questionnaire was designed to measure the empathy for victims of violence (real or fictional). This survey was composed of six items on a 5-point Likert-type scale (1 = not at all; 5 = very much so) and has a Cronbach's  $\alpha$  of .79. Items included such statements as "I felt very badly for the victims of violence I watched in the clips I saw," "I felt that I could almost feel the pain of the victims of violence in the clips I saw," and "I was saddened to watch the clips of violence that I saw." Participants were instructed to respond only to the short clips, not the TV episode.

**State Anxiety Scale (Strait-Trait Anxiety Inventory).** Stress was measured using the State Anxiety Scale from the Strait-Trait Anxiety Inventory (Spielberger, 1983). This scale is made up of 20 items, with participants choosing 1 of 4 response choices (1 = not at all, 2 = somewhat, 3 = moderately so, and 4 = very much so). This scale has a Cronbach's  $\alpha$  of .91. Items include statements such as "I feel calm," "I am tense," and "I feel anxious." Anxiety was included as a measure, as it would be expected that viewers of real violence who are desensitized would experience less anxiety upon viewing such violence.

**Aggression questionnaire.** The scale used in this study to measure the construct of aggression is a 15-item short form of the Aggression

Questionnaire (Buss & Warren, 2000). Each of the items is answered with 1 of 5 choices (1 = not at all like me, 2 = a little like me, 3 = somewhat like me, 4 = very much like me, and 5 = completely like me). Items on this scale include statements such as "My friends say I argue a lot," "I flare up quickly but get over it quickly," and "At times I get very angry for no good reason." This scale has a Cronbach's  $\alpha$  of .87.

### Procedure

Participants from undergraduate courses attended 1 of 12 sessions being offered. Each session had been randomly assigned 1 of the 6 TV episodes used for this study and either the real-life violence video clip or the fictional violence video clip (there were 12 sessions in order to pair all 6 episodes with both the real-life violence treatment and the fictional violence treatment). Using *t* test analyses, exemplars in each group of TV show (violent and nonviolent) did not differ from each other in outcome variables nor enjoyment of the show, suggesting that the exemplars were robust in tapping into the content domains of interest. Sessions occurred in the university movie theater, which seats about 200. Thus the small groups of about 20 could be physically spread out. Each research session was conducted in the same manner by the same researcher. At the beginning of each session, the experimenter explained that the participants would be asked to rate the quality of a TV show as well as a brief clip. This explanation was the same for all 12 sessions. The investigator then turned on the projector and began the TV episode. Once the TV episode was over, the researcher stood before the participants and said, "That concludes our TV episode. I will now play the previously mentioned 6 minute clip." Depending on which clip was being played (violent vs. nonviolent), the researcher altered the explanation. If the treatment was the violent video clip the researcher said, "The clip you are about to see contains instances of real violence." If the treatment was the nonviolent video clip, the researcher said, "The clip you are about to see contains scenes of violence from fictional movies." After addressing the participants, the video clip was played. Once the clip finished, participants received copies of the survey packets and responded to the questions within. The follow-up

questionnaire was administered as the final survey in the packet.

### Results

First, the two types of shows (violent and nonviolent) were analyzed using *t* tests for differences in show enjoyment. It has been argued that show enjoyment was a confound for much previous TV research (Freedman, 2002); thus, this issue is important to examine and control for. The violent and nonviolent exemplar groups were found not to differ in regard to show enjoyment ( $t(233) = 1.14, p = .25$ ). They were well-matched in this regard. Therefore, enjoyment was not considered further as a potential covariate. As was expected, violent shows were rated as significantly more violent than nonviolent shows ( $t(233) = 8.67, p < .001$ ). Taken together, these results suggest our exemplars were successful in isolating the violent media variable of interest. Main study hypotheses were analyzed using analysis of covariance (ANCOVA), with type of show (violent vs. nonviolent) and film clip (real vs. fictional) as independent variables and gender and trait aggression as covariates.

Analyses of VE revealed that VE differed in response to whether participants saw real ( $M = 24.68, SD = 3.73$ ) versus fake ( $M = 18.76, SD = 5.15$ ) video clips of violence,  $F(1, 185) = 79.47, p < .001, r = .55; 95\% CI [.46, .63]$ . The gender covariate was also significant,  $F(1, 185) = 13.96, p < .001, r = .26; 95\% CI [.14, .37]$ , with females demonstrating greater empathy ( $M = 21.41, SD = 5.42$ ) than males ( $M = 19.27, SD = 5.15$ ). The trait aggression covariate was not significant, but more importantly, media condition (violent vs. nonviolent) was not significant,  $F(1, 185) = 0.93, p = .34, r = .02; 95\% CI [-.11, .14]$ . In fact, the effect for media violence exposure was almost zero. Similarly, the interaction between media violence and fictional/real clips was nonsignificant,  $F(1, 185) = 0.36, p = .34, r = .00; 95\% CI [-.13, .13]$ . This analysis was then rerun with gender as an independent variable rather than a covariate. This did not substantially influence the results. No interactions with gender were significant. Results for the clips or media conditions also did not vary with the covariates removed entirely from the model. Thus, we are confident that the results are not the product of

Table 1  
Means and Standard Deviations For Victim Empathy by Television and Violent Clip

	Real violent clips	Fictional violent clips
Violent television shows	24.62 (3.57)	19.46 (5.63)
Non-violent television shows	24.55 (3.60)	18.45 (4.61)
Effect size for clips:	$r = .48$ ; 95% CI [0.38, 0.57]	
Effect size for television shows:	$r = .05$ ; 95% CI [-0.08, 0.18]	

Note. Numbers in parentheses are standard deviations; effect sizes reported here are for the analyses without covariates.

specific study methodology issues. Table 1 presents cell means and standard deviations for the TV and clip groups for the basic no-covariate model.

Analyses of state anxiety revealed that state anxiety differed only as a function of gender,  $F(1, 185) = 4.45, p = .04, r = .15$ ; 95% CI [.02, .27], with females exhibiting more stress, and trait aggression also covarying with stress,  $F(1, 185) = 14.73, p < .001, r = .27$ ; 95% CI [.13, .36]. Media condition (violent vs. nonviolent) was not significant,  $F(1, 185) = 1.03, p = .31, r = .07$ ; 95% CI [-0.06, .20]. Similarly, the interaction between media violence and fictional/real clips was nonsignificant,  $F(1, 185) = 0.31, p = .58, r = .00$ ; 95% CI [-0.13, .13]. This analysis was then rerun with gender as an independent variable rather than a covariate. This varied the results slightly. The gender variable became nonsignificant as an independent variable rather than as a covariate,  $F(1, 185) = 3.56, p = .06, r = .14$ ; 95% CI [.01, .26], although the effect size did not substantially vary. Otherwise results did not substantially differ. No interactions with gender were significant. Results for the clips or media conditions also did not vary with the covariates removed entirely from the model. Thus, we are confident that the results are not the product of specific study methodology issues. Table 2 presents cell means and standard deviations for the TV and clip groups for the basic no-covariate model.

## Discussion

Although desensitization due to media violence is often discussed in the general public and is part of social-cognitive theories of media violence, it has been a difficult topic to study, with most past studies focused on artificial stimuli and poorly matched media conditions. The current study used carefully matched TV shows and exposure to filmed acts of real violence in order to improve upon past research. Thus the current study is the first to our knowledge to examine how viewers of violent media respond empathically to actual violent acts, and whether they feel less empathy for victims of violence as a result of media exposure.

First, our results indicate that people responded with more empathy when they knew they were seeing scenes of actual violence with real people being harmed compared with when they were watching fictional scenes. This is an important point, as it provides demonstration that human brains process information differently depending upon whether it is understood to be real or fictional. Some previous research with children has explored this (e.g., Woolley & van Reet, 2006) although not with media violence. Social-cognitive theories have sometimes been criticized for their implicit assumption that the human brain does not distinguish reality from fiction (Ferguson & Dyck, 2012), although our data suggests the reality/fiction

Table 2  
Means and Standard Deviations For State Anxiety by Television and Violent Clip

	Real violent clips	Fictional violent clips
Violent television shows	41.33 (10.60)	41.37 (11.69)
Non-violent television shows	39.62 (9.63)	37.98 (11.25)
Effect size for clips:	$r = .03$ ; 95% CI [-0.10, 0.16]	
Effect size for television shows:	$r = .11$ ; 95% CI [-0.02, 0.23]	

Note. Numbers in parentheses are standard deviations; effect sizes reported here are for the analyses without covariates.

distinction is important to the processing of stimuli.

More critical to the central hypotheses examined in this study, exposure to media violence had no impact on empathy toward victims of real violence (Hypothesis 1), nor were viewers of media violence less stressed upon seeing real violence (Hypothesis 2). Whether participants viewed violent or nonviolent TV shows had no impact either on the empathy they felt toward victims of real violence, nor regarding the stress they experienced while watching the clips. These findings are in opposition to what would be expected by social-cognitive theories and give credence to critics' concerns about these theories (i.e., Freedman, 2002; Olson, 2004; Savage, 2008). Some scholars may raise the objection that the lack of findings may be due to Type II error, but an analysis of effect sizes finds that the effects were near to zero [ $r = .02$  in the case of empathy and  $r = .07$  for stress, both below Cohen's (1992) recommendations for trivial effects], with confidence intervals crossing zero. Thus, particularly with a robust sample of 238, Type II error is not the likely explanation for these null effects.

Two factors in the current study may explain how our results differ from those of Bushman and Anderson (2009). First, matching of media conditions has been identified as a critical problem in the field of media studies (Adachi & Willoughby, 2011; Przybylski et al., 2010). Although it is always difficult to perfectly match media conditions, we believe that our conditions were better matched than was common in previous media violence research (see Freedman, 2002). With the absence of numerous potential confounds, our results may be more representative of actual phenomena in real life than was achieved in previous research. Second, our target stimuli involved scenes of actual injury or death, not unnatural laboratory skits or acting, which may have been subject to subtle introductions of demand characteristics. Thus, our findings are indicative of how empathic people feel to *real* violence rather than contrived scenarios.

Our results have implications for the theoretical and clinical study of violence and aggression. For some time, social-cognitive models of aggression have emphasized cognitive processes involving the acquiring of scripts and desensitization. Such approaches have not al-

ways comported well with diathesis stress models of aggression, which suggest such behaviors are not so much learned, but the product of genetic predisposition and environmental strain (Ferguson & Dyck, 2012). Our current results weigh against the social-cognitive view, suggesting that desensitization, at least due to exposure to the media, plays little role in the acquisition of aggressive scripts. Given that social-cognitive models do not distinguish clearly between fictional media-based learning and exposure to violence in real life, it may be reasonable to suggest at least that preventative efforts that focus on media may not be capable of delivering in terms of real-life based reductions in violence (Hetsroni, 2012). Clinical practitioners will likely find that pursuing preventative efforts for aggression that focus on reducing desensitization due to fictional media will have limited impact on real-world empathy toward victims of violence.

As with all studies, ours has limitations that should be addressed. In our methodology, we informed participants as to the real/fictional nature of our video clips. This was decided upon because it was important that we clearly examined the issue of participant's understanding of reality and fiction. However, there would be value in examining this issue using clips without prompts to see whether participants responded similarly. Such a procedure would provide further evidence that participants could decipher reality from fiction without being explicitly informed. Further, our sample was Hispanic majority and thus cannot be generalized to non-Hispanic populations. In our case, a Hispanic majority sample simply represents the city in which the university is located, which is 92% Hispanic. However, we do note that a Hispanic majority sample extends this line of research to an ethnic population that is historically underserved. Nonetheless, replication of our results with other ethnic groups would be highly desirable. Lastly, our study examines the impact of physical aggression and violence and media, but does not consider relational aggression. It is possible that different results could be obtained with shows that differ on the presence or absence of relational aggression. Further research that considered this would be of great value.

We suggest that the use of desensitization as a notion in academic scholarship has been an

example of *petitio principii* in which the idea was first accepted as “true” and then followed by research that actively sought to confirm the accepted truth rather than evaluate it objectively (Bennerstedt, Ivarsson & Linderoth, 2012). We suggest instead that desensitization to fictional violence may not readily transfer from fictional violence to real-life violence. Indeed, the ready transfer of this type of knowledge from fictional media to real-world behavior has perhaps been a too readily accepted, but largely unproven, assumption of social-cognitive theories of aggression. We suggest that it may be time for psychological science to reduce its emphasis on social-cognitive models of aggression and focus instead on models that acknowledge that media effects are more individualized, actively driven by the view, and subtle than has traditionally been the case for psychological media theory (Ferguson & Dyck, 2012; Savage, 2008; Sherry, Lucas, Greenberg, & Lachlan, 2006; Weems, Scott, Banks & Graham, in press).

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Received May 4, 2012

Revision received August 17, 2012

Accepted August 20, 2012 ■

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