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dissertation entitled

THE RELATIONSHIP BETWEEN A PREDISPOSITION TO
THINK ABOUT KILLING AND MEDIA VIOLENCE
EXPOSURE: EXPLORING A NEW MEASUREMENT MODEL

presented by

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has been accepted towards fulfillment
of the requirements for the

Doctoral degree in Communication

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11/07/06
Date

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[redacted]

THE RELATIONSHIP BETWEEN A PREDISPOSITION TO THINK ABOUT KILLING AND MEDIA VIOLENCE EXPOSURE: EXPLORING A NEW MEASUREMENT MODEL

By

Aaron R. Boyson

A DISSERTATION

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

DOCTOR OF PHILOSOPHY

Department of Communication

2006

ABSTRACT

THE RELATIONSHIP BETWEEN A PREDISPOSITION TO THINK ABOUT KILLING AND MEDIA VIOLENCE EXPOSURE: EXPLORING A NEW MEASUREMENT MODEL

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A two part survey (n = 195) was conducted to replicate and extend previous work investigating the relationship between media violence exposure and homicidal thinking. A trait-like, multidimensional inventory of homicidal thought was employed in addition to retrospective reports. Data were consistent with a 7-factor solution. Six of these dimensions were related positively to the number of actual thoughts reported. The finding that media violence exposure predicted recalled homicidal thoughts was replicated. Media violence also predicted scores on several trait-like factors. After controlling for aggression, the pattern of data suggests that media violence is most closely related to reactive thoughts, generated under conditions of negative affect and for whom attention to homicide in the mass media is most likely. Results are discussed in terms of fitting homicidal thinking into process models of other aggressive thinking.

To my wife; tu eres mi amor de verdad.

ACKNOWLEDGEMENTS

This dissertation exists because of the mentoring afforded to me by an outstanding committee. Nearly everyone says that. In my case, it is especially true. To rest well, I must highlight for posterity each member's particular dedication to my pursuit.

Professor Stacy L. Smith served as inspiration, desperation, nudger, prodder, mentor, kicker-in-the-pants, counselor, advisor and committee chair.

Professor Chuck Atkin served as committee member, who was keenly instrumental in providing an estimate of the number of words one should write per day to complete a dissertation (i.e., 192). I wish I had listened to him.

Professor Franklin J. Boster served as committee member, occasionally enduring phone calls in the midst of sleep and nagging on the weekend, one of which included the 4th of July.

Professor Tim R. Levine served as committee member, occasionally willing to append his summer plans to facilitate my progress. He was and is patient, empathic, and uncommonly reasonable.

Dean Charles T. Salmon served as the outside member in nearly the truest sense of the moniker, reading manuscripts from both East Lansing and while on fellowship to the Middle East.

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INTRODUCTION

"There's this kid & I desperately wanna lace him - I wanna throw him on the ground - spray the pound - And erase him - But in my heart i be 2 scared 2 face him - Matta fact this kid goes by the name Jason" – 10th grade student web log, 2004

How often are people moved to have thoughts about homicide? To date, very little research has been conducted to answer this question. Some research attention has been devoted to assessing psychiatric populations. The general finding from this group of studies is that about one-third to one-half of psychosocially impaired individuals report having thoughts about killing others (Altman, Sletten, Eaton, & Ulett, 1971; Korn, Plutchik, & Praag, 1997; Schwartz, Peterson, & Skaggs, 2001; Wisner, Peindl, & Hanusa, 1994). Diagnoses for a host of psychiatric disorders often include homicidal thoughts as serious warning signs that warrant medical attention.

Some research suggests that these thoughts may not be symptomatic of just the emotionally unhealthy. Three studies have examined the homicidal thoughts of people with ostensibly no psychiatric impairments. Kenrick and Sheets (1993) asked undergraduates to detail the last time they had thoughts about killing someone, including the circumstances triggering such thoughts and their relation to the victim. Overall, a full 68% of the students reported having had at least one homicidal fantasy. Feeling personally threatened was the most common cause of such thoughts. In a follow up study, a similarly high percentage (69%) of students said they had fantasized about homicide.

Using similar methods, Crabb (2000) asked participants to recall their homicidal fantasies. His instrument included a measure of the reported sources that influenced participants' thoughts. Undergraduate students who reported fantasies involving weapons also were asked if their fantasies were influenced by a model, mass media or otherwise. Among a sample of 295 participants, he found that 45% recalled a recent homicidal fantasy. The most common weapons used were the body (24%) followed closely by firearms (23%). Of those who fantasized with a weapon, 84% said their fantasy had been modeled by some source. Interestingly, the three most commonly reported modeling influences were films (83%), news stories (72%), and TV programs (68%).

Does the mass media really have the potential to influence thoughts about homicide? Crabb's (2000) study only implies such a relationship because media violence exposure was not examined. The main aim of this investigation is to provide a more direct test of the relationship between media violence consumption and thoughts about homicide. At least three theoretical frameworks bear on homicidal thinking as a routine cognitive behavior. These perspectives rely on evolutionary psychology, and both short- and long-term schematic processing to derive key theoretical concepts.

REVIEW OF LITERATURE

Explaining Homicidal Thinking

Findings from both of the previous two investigations were interpreted by the authors from an evolutionary perspective. Using this lens, homicide itself would have served many benefits including prevention of premature death and gaining or protecting

life-sustaining resources. Thinking through scenarios involving homicide may have increased killing ability. If so, homicidal ideation would have been a genetically preferenced, cognitive trait.

This perspective works well when considering the environment of evolutionary adaptation but it has clear limits today. Data from the latter study (Crabb, 2000) suggest that the mass media may play a role in the development of such thoughts. This invokes an additional theoretical perspective. Perhaps long-term exposure to violence or homicide in the mass media helps develop more sophisticated procedural information about killing (Huesmann, 1998). To the extent that repeated exposures serves as rehearsal or retention, programs for homicidal behavior may be more easily drawn to mind in some social situations. Both an evolutionary and a social-learning perspective may be useful in exploring the generation of homicidal thoughts.

Boyson, Smith, and Rosaen (2004) began to address this question by surveying undergraduate students about their homicidal thoughts as well as their patterns of exposure to violent media. Results indicated that exposure to media violence was positively related to homicidal thinking, even after controlling for aggressiveness, empathy, and impulsivity. Such findings are consistent with a large and growing body of research demonstrating that viewing media violence can contribute to aggressive cognitions and behaviors in both children and adults (for review, see Anderson & Huesmann, 2003). Thus, homicidal ideation may be a particular type of aggressive thought that exposure to media violence cultivates.

Or does it? One problem with this conclusion is that aggression and homicidal thinking were not positively related as both evolutionary and social information

processing theories would predict. This finding was unexpected due to previous research showing that trait-like aggression moderates the relationship between exposure to violent stimuli and aggressive thought (Bushman, 1995). Given Bushman's finding, one would expect that increases in media violence exposure would enrich the schematic information available to people prone to react aggressively. The absence of a relationship between aggression and homicidal thought, if valid, suggests that this type of thinking may be qualitatively different than other aggressive thinking.

A second finding is somewhat surprising. Unlike aggression, empathy was related *positively* to homicidal thinking. Yet studies typically reveal an inverse relationship between aggression and empathy (Cohen & Strayer, 1996; Miller & Eisenberg, 1988). Indeed, as expected these two variables correlated negatively with each other in the only previous investigation (Boyson et al., 2004) to include them as predictors of homicidal thought. What can explain this finding? Vulnerability to emotional reactivity is part of the empathy measure (Davis, 1983), and other research suggests that emotional regulation has a role in both feelings of distress (Eisenberg, et al., 1994) and aggression (for review, see Caprara & Pastorelli, 1989). Perhaps empathy taps a kind of emotional reactivity that promotes homicidal thinking.

While these possibilities are intriguing, a substantial conceptual limitation may be a bigger concern. The way homicidal thinking has been measured may explain both of these findings. It could be argued that all three of the previous studies examined state-like thoughts. In these cases, participants first were asked to list any homicidal thought remembered. A myriad of situational influences were reported. As a result, we know very little about the cross-situational consistency of thinking about homicide. Only two

studies attempted to measure such a tendency (Boyson et al., 2004; Kenrick & Sheets, 1993). Both used single-item measures with severely limited content validity and unknown psychometric properties. For both methodological and conceptual reasons, these data have limited value in terms of building a process model that eventually could lead to an understanding of 1) the personality profile of a homicidal thinker, 2) the conditions under which people are most prone to think about killing, and 3) the similarity or differences between aggressive and homicidal cognitions. A general tendency or predisposition to think about homicide may be important to a theoretical understanding of the process leading to homicidal thoughts.

Distinguishing between states and traits has been important in personality research (Eysenck, 1983). However, Mischel (1968) has argued that trait conceptualizations of personality are misleading because behavior depends heavily on situational factors. Contemporary measurement models attempt to account for both states and traits as they influence cognition or behavior (Steyer, Schmitt & Eid, 1999). Latent state-trait theory rests on the assumption that human cognition, emotion, and behavior are dependent upon stable characteristics of individuals. From this perspective, we know almost nothing about the possibility that some individuals may have a characteristic tendency that predisposes them to homicidal thinking. A trait-like aspect of homicidal thinking likely was left unexamined by previous researchers. Thinking about killing, as a tendency, simply may not be decomposed so easily into self-reported recollections and single-item measures of thought. This limitation makes interpreting the previous findings risky.

Given the above limitations of the previous research, it is relatively safe to conclude that we have no empirical evidence that suggests whether individuals can be trait-like in their tendency to ruminate about killing. Therefore, the purpose of the present study is fourfold: 1) to provide a conceptual framework for homicidal thinking, 2) to build a measurement model of a trait-like predisposition toward homicidal thinking, 3) to examine the relationship between homicidal thinking and media violence exposure, and 4) to retest the relationships between empathy, aggression, and homicidal thinking using a more trait-like measurement model.

This new measure relies heavily on the descriptive analysis of previous homicidal thoughts collected. But it also has been informed by research and theory focusing the role of aggressive cognitions as antecedents of aggressive behavior (Anderson, 1997; Bandura et al., 2001; Berkowitz, 1984; Crick & Dodge, 1994; Huesmann, 1998) and the multidimensional nature of imagined interactions (Honeycutt, 2003; Honeycutt, Zagacki & Edwards, 1989). Together, these perspectives provide a reasonable framework for defining homicidal thinking more completely and suggest that cognitive, affective, and frequency content domains should be used to conceptualize a measurement model. Figure 1 presents a diagram of seven dimensions extracted from these domains. A general definition is offered next, followed by an explanation of each domain.

Conceptual Definition

Broadly, homicidal thinking is defined as the act of developing or rehearsing cognitions about killing another person. Killing another person is defined as the intentional or willful act of taking another human life by, or on behalf of, the thinker. Accordingly, a homicidal thought or collection of thoughts may be an imagined scenario

of killing that features real or fictitious people, in real or fictitious settings, and may or may not be directly perpetrated by the person conjuring the thoughts. This definition lacks any key distinction between other aggressive thoughts, other than delimiting the behavior type in imagination (i.e., killing versus harming).

Qualitative analyses from previous homicidal thought data overlaps somewhat with the literature investigating aggressive cognition. The Buss and Perry (1992) measure, for example, focuses on the cognitive and emotional components of aggression. Additionally, Honeycutt's explication of imagined interactions (Honeycutt, 2003; Honeycutt et al , 1989) suggests that thoughts can be measured as tendencies that vary in terms of their perceived utility and emotional arousal. As with an aggression predisposition, these literatures suggest that homicidal thinking may also be examined as a stable personality feature which is multidimensional. Seven such dimensions are detailed next.

Reactive Thinking. One dimension of thought that emerges most obviously from the data gathered is the tendency to conjure thoughts following a threat. A substantial case has been made that much of aggression and homicidal behavior follows provocation (for reviews, see Baumeister & Boden, 1998, Berkowitz, 1993). In addition, this research clearly reveals two different types of both homicidal and aggressive behavior. On the one hand, some homicide and aggression is goal-directed in the absence of threat (proactive). On the other hand, the vast majority of homicide and aggressive acts appear to be the result of provocation and/or threat (reactive) where the goal may simply be protection or retaliation.

In terms of imagining homicide, *reactive thinking is defined as the tendency to have a homicidal thought caused by aversive situations that are perceived to damage or potentially damage one's psychological or physical well-being.* This definition would include both threats to the self and others and may be damaging to the body, personal property, or the mind. Two examples from Boyson et al. (2004) are illustrative. In one thought, a young girl was inspired to have a homicidal fantasy against a third-party who killed her best friend in a drunk-driving accident. This accident did not threaten her directly, but did appear to damage her psychological well-being. A second fantasy came from a young man who apparently was humiliated in public when his hat was repeatedly flicked by another man while attending a basketball game. In this case, retaliation apparently took the form of an imagined homicidal interaction.

Proactive Thinking. A less common thought motive may be to imagine killing in the absence of threat/provocation but in order to satisfy some other physical or psychological goal. This type of thought is consistent with an instrumental orientation (Moyer, 1976), where aggression is viewed as a viable way to satisfy needs or wants. A minority of collected thoughts and fantasies about killing seems to point to this type. Some homicidal imaginations did not follow any apparent aversive situation. In fact, these thoughts seem goal-oriented, if only as a way to pass the time or to satisfy some curiosity. One person wondered "what it would be like" to be in the mob and kill for a living. Some thoughts about homicide may be a means to some end, regardless of how large or small the gratification. *Thus, proactive thinking is defined as the tendency to engage in thinking about homicide that, by its act, is self-gratifying (at the individual or group levels) and is not born from a negative affective state.* This motive may include

attainable goals in reality (e.g., power), or psychological goals (e.g., entertainment or curiosity). The term collective goal is included to allow thoughts of killing in order to advance some group position or purpose, as in war, for example.

Proactivity is also a dimension of imagined interactions (Honeycutt, 2003). From this perspective, proactivity is defined as an interpersonal interaction imagined in advance of the actual interaction often for preparatory reasons. The definition offered here for proactive homicidal thought is distinctly different. No claim is made that some homicidal thoughts are proactive in the sense that they might prepare an individual for some future interaction. Here proactive is intended to indicate a type of homicidal thought that occurs, without threat, when a person imagines a homicidal act of any kind, regardless of whether the target is a real person.

Proactive homicidal thinking may well take the form of fantastic engagements rather than real, although this is not required. For example, a proactive thought could be one that includes fictitious weapons, characters, and settings found in a video game that is formed out of boredom while a student is languishing in class. This would be a fantasy-based (i.e., not possible) imagined homicidal interaction that serves some entertainment goal. Alternatively, homicidal thoughts could be fantastic, although based in reality (i.e., actions are possible). Thoughts about killing in war would qualify provided that the killing was unprovoked. For example, thoughts about killing Osama bin Laden after September 11th would be reactive thoughts. However, generalized interest in killing in battle with a non-specific threat or reason could promote homicidal thought that would fall under the proactive rubric. These examples have been found in previously gathered thoughts, and seem to be tied in some way to the mass media.

Media-related Thinking. The thought mentioned above by the person who wanted to know "what it would be like" was apparently inspired by *The Sopranos*, a popular mob-based drama on HBO. Given the vast array of symbols and themes including violence (Smith et al., 1998) and homicide (Huston et al., 1992), on television alone, it is not surprising that two previous reports point to the role of mediated models in homicidal thought (Boyson et al., 2004; Crabb, 2000). These connections are bolstered by theories indicating the influence of observational modeling via the mass media (Bandura, 2001) and of the role of repeated exposure to violence in the formation of script-based information about aggression (Huesmann, 1998). When considering the possibility that homicidal thinking may be a genetically-based predisposition (Kenrick & Sheets, 1993), mass-mediated images may be an important source of information for some who have no direct experience with killing or weapons. *Therefore, media-related thinking will be defined as the tendency to think about homicide as a consequence of consuming mediated images of violence and death, or the tendency to invoke mediated models of killing when forming unique thoughts.*

The dimensions postulated thus far are derived from the cognitive components of thought. The next section will outline the emotional component. In data gathered previously (Boyson et al., 2004), emotion seems to play a key role in forming homicidal thoughts.

Negative Affective Homicidal Thought. A substantial literature suggests that anger producing situations can cause greater accessibility of aggressive thoughts. Anderson and Huesmann (2003) review this body of research and conclude that provocation "is undoubtedly the strongest situational instigator of human aggression" (p.

304). Not only are aggressive thoughts more accessible to people following provocation (see Berkowitz, 1984), but this accessibility appears to be stronger for people scoring higher on measures of trait-like aggression (Bushman, 1995). Further, irritable people who may be more prone to provocation seem to be important to this theorizing (Caprara & Pastorelli, 1989). For example, trait hostility and negative arousal seem to interact to make aggressive thoughts more accessible (Anderson, Anderson, Dill, & Deuser, 1998). In part, this association may be explained by self esteem. People with inflated or unstable views of self-superiority seem to be the most prone to encountering threats, that may turn violent (Baumeister, Smart, and Boden, 1996). In other words, a fearful orientation towards social interaction, one of protection, may promote this type of thought.

Not surprisingly then, homicidal thinking seems to be connected strongly to conditions of negative affect. Most of the reports analyzed to date resulted from frustrating, potentially anger producing situations (Boyson et al., 2004; Crabb, 2000; Kenrick & Sheets, 1993). *Negative affective fantasizing is defined as the tendency to formulate homicidal fantasies as a result of cued aversive emotional states. Such states would include but are not limited to anger, fear, or disgust.* But why might negative affective conditions be separate from other, more positive ones?

Positive Affective Homicidal Thought. Socio-cognitive biases play a mediating role in aggressive behavior. Dodge and Coie (1987), for example, have found that aggressiveness in boys can be categorized as reactive or proactive based on a hostile attribution bias. Reactive aggressors can likely be categorized as emotional, irritable, and distressed as a result of perceiving others in their environment to be acting with the intent

to harm. By contrast, proactive (i.e., instrumental) aggressors do not have this same bias. Accordingly, their motivation for aggressive behavior (or thoughts) seems to come from the belief that aggression is an acceptable tool for gratifying needs or wants. In addition, some evidence indicates that this profile includes evidence of superior thinking (Baumeister & Boden, 1998) and a decreased ability to perceive others as equal to the self (Greco & Cornell, 1992). These distinctions suggest that some people may find it useful, even pleasurable, to entertain homicidal thoughts, even when they do not evolve from negative feelings.

This possibility is even more likely considering the goal-directed nature of selective exposure to mass media (for review, see Rubin, 2002). People use the mass media as a function of both cognitive and emotional motives. Evidence that people are attracted to media fare just because it is violent is weak (Diener & de Four, 1978; Diener & Woody, 1981). However, the popularity of movies, television shows, books, video games, and even music that discuss or portray homicide suggests that people are willing to expose themselves to situations involving killing. Homicidal thinking simply may be a fun, entertaining or positively arousing cognitive activity because of its novelty. *Thus, positive affective thought is defined as the tendency for an individual to develop homicidal fantasies in the absence of negative affect, or to gain a positive emotional state from doing so.*

In terms of imagined interactions, (Honeycutt, 2003) affect also has been conceptualized as its own dimension of thought. In this case, the dimension is called valence and is defined as the degree of emotional affect produced while having an imagined interaction. This research shows that affect is important to consider in terms of

both the type of interaction, and the subject's memory for it. Honeycutt's definition is directed more toward the type of emotion produced as a result of having the thought. In the two previous affect dimensions conceptualized here, I am concerned with the role of emotional affect in producing a homicidal thought. Alternative dimensions of affect could be advanced that focus on affect produced as a result of thinking, but this inventory is designed to tap a dispositional tendency to engage in a specific cognitive activity. Thus, it is most useful at present to focus on emotions as antecedents of thought. In part, this is because most of the reported thoughts seem to be produced in angry or threatening situations and thus may be caused by severe emotion. In at least one way, this is consistent with some research in the imagined interaction literature. Zagacki, Edwards, and Honeycutt (1992) have found that strong emotional intensity during imagined interactions is most closely tied to negative and mixed feelings, and that stronger intensity is more often associated with topics such as relational conflict.

The preceding dimensions of thought encompass the parallels between aggressive and homicidal thought from research in both domains. However, the limitation of previous state-like measures would be inadequately addressed without accounting for the tendency to have repeated thoughts about homicide.

Frequency. The relative number of fantasies a person experiences is an equally important dimension to tap. Rachman and di Silva (1978) compared the obsessional thoughts and impulses of eight clinical and 124 non-clinical individuals. They found more similarities than differences in the thought content across both groups. Withing this sample, clinical patients reported more frequent and longer lasting obsessions than their non-clinical counterparts. Because thoughts about killing were present among both

groups, the authors concluded that normal and obsessive people's general obsessions differ with respect to frequency and duration. Psychiatric diagnoses including post-traumatic stress disorder, obsessive compulsive disorder, general anxiety disorder, and others use the number or duration of thoughts as one symptom of psychological impairment. Thus, the frequency of homicidal thought may be an important concept to examine if one aims to distinguish healthy from dysfunctional people.

This reasoning suggests that frequency can be divided into two types that center on the reason or situation that inspired the thought. Some people may have one recurring homicidal thought or fantasy that is rehearsed over time. Similarly, these same individuals may have different homicidal thoughts targeted at one or two individuals from one or two memorable events. Thoughts such as these seem to be repetitive in nature. They would tend to be inspired by the same event and focus on killing the same individual. Alternatively, another type of frequency is defined by the number of thoughts a person may have across a variety of situations and that focus on a variety of targets. These thoughts seem independent of one another and are not necessarily repetitive cognitions.

The previous research suggests that these frequency types may be useful to examine. Several reports from college students have included thoughts more than 10 years old (Boyson et al., 2004). One female student's fantasy included the use of a gun to shoot off the genitalia of her mother's boyfriend. Apparently, she was 11 years-old at the time. The mother had provided the student with the weapon because the boyfriend was suspected to be sexually attracted to the daughter. Memory for such a situation could be long-lasting due to its extreme negative arousal (Bower, 1981; Brown & Kulik, 1977).

This type of thought could be replayed in one's mind for months, if not even years, and may explain why it could be retrieved after long periods of time.

As a result, frequency of homicidal thought will be defined as 1) the tendency to have a wide variety of distinct homicidal imaginations, and 2) the tendency to replay (cognitively) a small number of homicidal thoughts. This definition is intended to allow for the measurement of the raw frequency of homicidal thought, paying attention to thoughts that differ by motive, target, setting, method or cause. As suggested, these frequency tendencies may be the product of a different latent trait or experience. As a result, each frequency definition will be treated as its own dimension of homicidal fantasizing.

Summary

A host of theories leading to violent behavior features aggressive cognitions (Anderson, 1997; Bandura, 1990; Berkowitz, 1984; Crick & Dodge, 1994; Huesmann, 1998). This line of research generally has examined thought accessibility, or attributions of hostility are inferred following isolated conditions varying in provocation or negative arousal (Berkowitz, 1984; Dodge, 1985). Still, a predisposition toward aggressiveness has been shown to affect aggressive cognitions (Bushman, 1995). Previous limitations in measurement of homicidal thought preclude conclusions that homicidal thinking is anything more than an irregular or rare phenomenon. Consequently, seven dimensions of thought have been explicated that should underlie a tendency to think about homicide.

Cognitive components of thought generally include procedural information about the behavior itself, various situational antecedents, boundary conditions that govern the display of some behavior and are tapped by the proactive, reactive and media-related

dimensions. Research reveals that emotion and emotional control play an important role in aggressive thoughts (Berkowitz, 2000; Caprara & Pastorelli, 1989). The negative and positive affect dimensions will estimate the affective tendencies that should precede homicidal thought. Finally, two types of frequency have been defined. Some people may be willing and able to think about a variety of homicidal scenarios over time whereas others may instantiate such a thought infrequently. Two frequency dimensions distinguish these possibly very different tendencies.

Predictions

Homicidal thought inventory. As mentioned, the development of this instrument is intended to provide a more complete method of measuring homicidal thinking and to attempt to examine a trait-like tendency to think about homicide. Seven dimensions are predicted to differentially underscore a predisposition to think about homicide. While they all may be correlated with each other, they are not intended to represent a second-order unidimensional factor structure[1]. Rather, these dimensions should represent a more sensitive and meaningful set of interrelated concepts from which to expand our knowledge of the relationship between exposure to media violence and this type of thought.

Several dimensions from this inventory may cluster together, however. Two profiles or types of homicidal thinkers are expected, given the present theorizing. Anger, frustration, and fear seem to encompass the vast majority of emotional states while engaging in this type of activity. Because these types of thoughts have differing antecedents (reaction vs. proaction) they should also be associated with different emotional states (negative vs. positive). A person prone to hostile reactions to threat may

be qualitatively different than a person prone to thoughts that appear to serve self-gratification in the absence of threat. *Thus, it is expected that the reactive and negative affect dimensions will be more strongly related to each other than to the other factors. Similarly, the proactive and positive affect dimension will be more strongly related to each other than to the other factors.*

Social-information processing models of aggressive cognition suggest that those who elaborate or dwell on homicide in the mass media (media-related thoughts) should have a greater ability to compose thoughts under any circumstance, regardless of the purpose for doing so. Higher scores on the media-related thought dimension suggest that homicide violence is attended to or rehearsed more frequently or more intently. *As a result, it is expected that a predisposition to focus on or identify with homicide in the mass media should be positively related to both proactive and reactive thoughts about killing.* Thus, this dimension should be substantially related to both conceptualizations of thinkers outlined thus far.

A fourth finding is predicted with respect to the homicidal thought inventory. Crabb's (2000) participants who reported homicidal thoughts (retrospective reports) involving weapons were apparently influenced by televised and movie images of violence. Items on the inventory derived here are designed to measure more specifically the tendency to identify with or rehearse scenes, characters, or genres of media that are the most likely to feature homicidal behavior. *Thus, it is expected that the media-related dimension will be positively related to the open-ended measure of homicidal thinking.*

Media violence exposure. The primary goal of this investigation is to examine more closely the relationship between media violence exposure and homicidal thinking.

Whereas previous reports suggest a link, conceptualizing homicidal thinking differently may change the nature of these findings. One prediction is warranted. The media-related dimension of thought is designed to estimate a willingness to think about images and scenarios involving media-related homicide. Given that these individuals are more likely to seek out violent media containing homicide, *it is expected that media violence exposure will be positively and substantially related to media-related homicidal thought.* It is unknown how the remainder of the inventory will relate to media violence exposure at this point. Thus, a research question is advanced: *What is the relationship between media violence exposure and six remaining dimensions of homicidal thought?*

A second important goal is to retest earlier findings involving aggression, empathy, and homicidal thinking (Boyson et al., 2004). It was expected that aggression and homicidal thinking would be positively correlated but the data were not consistent with this expectation. Instead, aggression was uncorrelated with either open-ended reports or the single-item measure of thought frequency. In addition to the measurement limitations of the previous study, sample limitations may also explain these findings. Almost three-fourths of the undergraduates previously reported on were female (Boyson et al., 2004). Given that males tend to score higher on the aggression measure (Buss & Perry, 1992), restriction in range may have attenuated a true relationship.

In terms of empathy, it was expected this variable would correlate negatively with homicidal thought, but instead the data suggested that it was positively related to the amount and type of thoughts about killing. Empathy should promote an ability to consider others' feelings (empathic concern) and to contemplate multiple viewpoints in situations involving conflict (perspective taking). Thoughts about killing should be

uncomfortable to people who are better equipped to consider its consequences (Bandura, 2001). Given the method limitations raised so far, these two findings should be interpreted with skepticism and reexamined. *First, what is the relationship between aggression and homicidal thinking? Second, what is the relationship between empathy and homicidal thinking?*

METHOD

Participants

A non-probability sample of undergraduate students was drawn from classes at a large Midwestern university (i.e., Michigan State University). These classes were taught across several departments from several colleges. Students reported at least 17 different majors ranging from pre-law to communication to civil engineering. One-hundred ninety-five students completed both surveys. All but one reported their sex. Just less than 40% of the respondents were male. Half of the participants were either 21 or 22 years old, 25% of the sample were 18-20 years old. The youngest participant was 17 and the oldest reported 34 years old. Class level distributed somewhat unevenly, skewing toward upper class students. A full 80% of the sample was either junior or senior level. In terms of ethnicity, 71% of the sample was Caucasian, while roughly 10% were either African-American or Asian. As detailed below, exposure to media content was measured across four dominant outlets – tv, movies, music and video games.

Study participants reported substantial daily media use. The typical student reported consuming approximately two and one-half hours of music (SD = 190.97

minutes, Minimum = 0.00 Maximum = 1440.00), two hours of television (*SD* = 97.14; Minimum = 0.00; Maximum = 571.90), 90 minutes of movies (*SD* = 71.80; Minimum = 0.00; Maximum = 481.71), and 27 minutes of video games (*SD* = 66.47; Minimum = 0.00; Maximum = 481.71) per day. Summing these outlets, the typical student reported spending almost 6.7 hours per day with these forms of media content. This media use is slightly higher than expected, specifically for music and movies, given that college students typically spend less time with the mass media than other demographic segments (Condry, 1989). However, it is possible that these use estimates are higher because of media "multi-tasking," where someone is exposed to several media outlets simultaneously.

Instrumentation

Homicidal thoughts. In this study, participants were given both open-ended and forced-choice items to measure recollections of homicidal thoughts and a predisposition for doing so. The open-ended measure follows the form of previously reported methods (Boyson et al., 2004; Crabb, 2000; Kenrick & Sheets, 1993) with one change. After a primer question, students were asked to bubble yes or no to the statement, "In the spaces provided below, detail the homicidal thoughts you can remember having at one time or another in your life." Three spaces were provided for each participant to write as many as three thoughts. Previously, a homicidal thought was left up to the researcher's interpretation. This method has the advantage of providing some clarity when a memory is written ambiguously. A participant was given zero, one, two, or three depending on how many "yes" answers were completed (and, thus, not based on coding of the thoughts themselves).

The trait-like tendency to think about homicide was estimated by an index developed for this study. In total, this measure featured 59, five-point Likert-type items designed to measure the willingness to have a homicidal thought, even if one cannot be remembered at the time (see Appendix B). Tendency is defined as the willingness to think about homicide (e.g., "if someone threatens me, I may think about killing that person"), or its probability given certain situations (e.g., "when I'm in my car and someone angers me, I sometimes think about killing that person"). Each of the seven dimensions outlined previously were measured with multiple items featuring good reliability. Confirmatory factor analysis was used to examine the possibility that these dimensions were tapping a second-order factor. Data were not consistent with this possibility. Several large errors between the predicted and obtained factor correlations were obtained. Thus, each dimension is treated as an independent criterion variable in the analyses. Below is a qualitative description of each factor. Each dimension is described quantitatively in the next section.

The predisposition to think about homicide only when threatened (reactive thought) was measured using nine items. Higher scores indicated more agreement with each statement or an increased tendency to think about homicide under the conditions specified. For example, students responded to the statement, "Given enough aggravation, I may think about killing someone." Eight other similar items were intended to tap this particular disposition.

The tendency to think about homicide absent of any provocation or threat, or proactive thought, was measured with 15 items. This dimension was intended to estimate a participant's tendency to think about or fantasize killing another person simply as a way

to pass the time or because the idea satisfied some curiosity. To illustrate, the items "As I daydream, I may fantasize about killing someone," or "I sometimes wonder what it would be like to be a hit-man" were included in this dimension.

A tendency to have thoughts about homicide that is in some way guided by mass mediated content was estimated using 10 items such as, "I don't mind listening to music that talks about killing," or "When I'm at the movies I have fantasized about being a killer." Generally, this set of items aimed at the tendency to identify with, or elaborate on characters or scenes involving killing.

Two dimensions of homicidal thought focused on the emotion that may accompany such cognitive activity. Negative affect and positive affect were conceived as separate dimensions of thought activity. Six items each measured these two concepts. Negative affect items assessed anger, rage, fright, and stress that may accompany homicidal thought. In all cases, these items were based on the assumption that the affective state was an antecedent of thought. Positive affect items were similar in form but focused on feelings associated with liking, joy, arousal, and thrill.

Finally, two dimensions were composed to measure a predisposition to think repetitively about homicide. At least two types of repetition are possible. First, some thoughts or fantasies may be replayed in one's mind for days, months or even years. Six items were written to tap an individual's tendency to labor over, rehearse or dwell on one or two thoughts. For example, a person may have a particularly traumatic experience that conjures a homicidal thought. This trauma and the accompanying set of thoughts may be rehearsed over time.

A second type of frequency is the predisposition to have numerous thoughts involving different actors and scenarios. In this case, the individual is not repeating one or two thoughts but rather conjuring many different thoughts over time. The item, "I could have many, different fantasies about killing" exemplifies the final six items of this inventory.

Violence exposure. Three exposure measures were used to estimate the amount of violent content absorbed by each respondent. These measures differ in form as well as specificity. First, participants were asked to report the amount of time spent with each medium under study (movies, TV, music, and video games). This is a traditional, albeit crude estimate of exposure to violent content (Webster & Wakshlag, 1985) because it does not account for content specific effects. Nonetheless, participants reported the hours and minutes of exposure to each of the four media included across several days. Nine parallel questions were used for each medium. All answers were converted to minutes per day, the final unit of analysis for this measure. Each of these four estimates was added together to compute an overall measure of time spent with mass media content.

To assess media violence exposure more directly, both objective and subjective ratings of violence were obtained. This decision is warranted because the context of violent portrayals varies substantially, particularly on television (Potter & Smith, 2000). Consumers of violence interpret this violence quite differently (Gunter, 1985; Potter, et al., 2002). As portrayals vary by interpretation, so do effects outcomes, such as fear (Gunter & Furnham, 1984). To gather these data, students also were asked to list their five favorite and five most frequently viewed choices by medium (i.e., songs, movies) by writing them in 10 spaces provided on the questionnaire. Participants then rated the

amount of violence in each selection on a five-point semantic scale from "no violence at all" to "a lot of violence". This method attempts to quantify violence exposure from the viewpoint of the media-user, but is limited by variable perceptions of what may qualify as violence according to a theoretical definition of violence. These ratings were averaged across medium to provide an overall estimate of violence exposure. Not all participants listed 10 media selections, however. To account for this missing or unidentified data, the number of programs, movies, games or musicians listed was multiplied to each individual's violence rating average, within medium. Thus, the total violence score takes into account the number of items listed by the participant.[2]

To compute a more objective rating, independent coders examined each listing and provided a rating of violence in exactly the same manner as the participants did. Two undergraduate students, both female, reviewed a commonly used definition of violence and several examples before coding the data[3]. They used the same five-point rating scale as the actual participants did to compute the subjective ratings. Because of the amount of coding to be done, the chance that one or both would encounter a movie, show, game or musician unknown to them was high. In this case, each was instructed to use one of four web based sources of information about the medium (i.e., tvguide.com, imdb.com, gamespace.com, and muze.com for tv, movies, video games and music, respectively). Coder agreement was adequate to good. Bivariate correlations were computed between each coder's ratings, and the Spearman-Brown correction formula was applied. For movies, $r = .78$ (corrected $r = .87$); for TV $r = .42$ (corrected $r = .59$); for video games $r = .71$ (corrected $r = .83$); for music $r = .52$ (corrected $r = .68$). As a result, the average of the two raters' scores was computed for each individual. These

data were then averaged across media to provide an overall violence exposure estimate (using the same formula to account for the number of items written within each medium).

This method created two overall violence exposure measures from the viewers as well as the researcher's perspectives. The correlation between these two estimates was high (r = .66; corrected r = .80). As a result, these were treated as alternate indicators of violence exposure by averaging these two ratings.

Finally, a measure of recall of examples of homicide was used to estimate the amount of exposure to homicide in specific to which participants had been exposed. Ten spaces were provided and study participants were asked to briefly list as many scenes, images or scenarios involving homicide to which they were exposed in the mass media. The number listed was interpreted as the number recalled. Thus, no answer was expected to be written in each space. This interpretation precluded the necessity to treat any blank spaces as missing data. This measure did not relate well to other exposure measures, did not reveal any non-trivial associations, and is therefore not presented in the results section.

As a result, three types of measures of violence exposure were generated for 1) raw exposure (minutes per day) to all media content, 2) a composite of subjective and objective ratings of violence at the program or media selection level, and 3) a recall-based measure of homicide exemplars. This method yields three general media violence exposure estimates in addition to the scores derived for each medium. These three alternate measures did not correlate with one another and were retained as independent indicators in analyses.

To retest earlier findings involving aggression and empathy, the Buss and Perry (1992) measure of aggression and the Interpersonal Reactivity Index (Davis, 1983) were again used. Responses to the items in each scale were submitted to confirmatory factor analysis to examine the first and second-order factor structure in order to provide evidence for computing an overall score for both concepts.

Aggression. Buss and Perry's (1992) 29-item self report measure was used to estimate an individual's predisposition to aggression. Four factors comprise this measure – physical aggression, verbal aggression, hostility, and anger. These four dimensions have been shown to be both internally consistent and valid measures of a relatively stable tendency to act aggressively (Buss & Perry, 1992). The scale authors cite some evidence of a second-order factor that can be estimated by summing responses to all items.

Empathy. The Interpersonal Reactivity Index (1983) developed by Davis was used to estimate empathy as a personality characteristic. This measure has demonstrated good internal consistency with each factor. Twenty-eight items are used to examine a person's empathic concern, fantasy, perspective taking, and personal distress. The author of this scale does not present evidence of a second-order factor structure. These factors are substantially correlated with each other (Davis, 1983), and in the previous study (Boyson et al., 2004) data from confirmatory factor analysis suggested a unidimensional structure for all these factors.

Procedure

Two surveys were administered separately in order to reduce the likelihood that students would recognize the research aims. The first survey was designed to measure 1) preference for violent media content across television, movies, video games, and music,

and 2) personality variables that may be related to homicidal fantasies. It was distributed in a classroom setting and students spent approximately 30 minutes of class time completing it. The second survey was distributed approximately two to three days later, usually the next time the class met. To reduce the likelihood that the surveys would be connected in the minds of the respondents, a confederate researcher was used whenever possible. The second instrument was designed to elicit individuals' recollections of homicidal thoughts, including estimates of both the frequency and willingness to think homicidally. Additionally, one alternate measure of homicide exposure from the mass media was included in the second survey.

The main concern in gathering data to address the questions here is that participants would perceive the researcher aims and answer "favorably" to the homicidal thought measures. To address this concern, measures were divided across two disconnected surveys. In order of appearance, the first survey included media exposure, personality, and demographic measures. The second instrument solicited open-ended and forced-choice responses about homicidal memories and thoughts, respectively.

The initial questionnaire was passed-out to students during a variety of classes taught during a summer academic session. The study was introduced to the class first as a study investigating media use and some aspects of personality that may or may not be related to media use. All instructors provided class time to complete the survey. After about 30 or 40 minutes the surveys were collected. At that time, students were not told about the follow-up survey or the connection to homicidal thinking.

Usually two to three days later, during the next meeting of each class, the second instrument was distributed. Again, this set of measures was completed in a classroom

setting. This time, the researcher explained that the purpose of the study was to learn more about the nature of homicidal thinking, given that it has been shown to be quite normal in several previous reports. No connection to the initial survey was made at this time. When all participants were finished, students were be debriefed by the researcher or a research assistant in the group setting.

RESULTS

In addition to the seven dimensions of homicidal thinking that were assessed an open-ended measure that asked participants to describe as many as three specific homicidal recollections was obtained yielding eight different measures of homicidal thought. Second order factor analyses performed on these data resulted in the rejection of the model that posited a single second order dimension. Moreover, no multi-factor second order model that fitted the data was found. Thus, each of these eight measures of homicidal thinking is treated subsequently as a separate dependent variable (see table 1).

Table 2 summarizes the zero-order correlations between the set of variables used to predict homicidal thinking statistically. As argued previously, three variables (media violence exposure, aggression, and empathy) were predicted to be important antecedents of homicidal thinking. Additionally, sex, grade point average (a proxy for intellectual capacity), and general media exposure were included as control variables. Sex was included because it has been associated with homicidal thinking in some studies, with women being less likely than men to report homicidal thoughts (Crabb, 2000; Kenrick & Sheets, 1993). Although no known literature has demonstrated such an effect, a proxy for

intelligence was included to examine the alternative explanation that those with greater intellectual capacity have less homicidal thoughts. Similarly, no known studies have demonstrated an effect for general media exposure. Nevertheless, the hypothesis that those with greater media exposure engage in more homicidal thinking has intuitive plausibility. The overall pattern across media, particularly television, movies and video games, is that violence is featured frequently. Consequently, general media use will be examined.

The Distribution of the Predictors

Of the 195 participants who completed both surveys, 194 (99.50%) responded to the item asking them to indicate their sex. Of these 194 participants 60.30% indicated that they were female and 39.70% reported being male. To characterize this sample in terms of homicidal thinking, 29.90% could recall at least one homicidal memory. This estimate is a slightly lower estimate than two previous reports (Crabb, 2000; Kenrick & Sheets, 1993) but is similar to previous data (about 33% reported thoughts about killing in Boyson et al., 2004). With respect to sex, 24% of the female respondents recalled a homicidal thought vs. 38% of the males ($\chi^2(1, N=194) = 3.67, p = .06; r = .14; OR = 1.92$). Thus, this sample is similar to those studied previously in terms of the primary outcome measure.

When asked to report their grade point average, 96.40% of the participants responded. The distribution of scores approximated closely the normal distribution. These scores ranged from two to four with a mean of 2.97 and a standard deviation of .46.

Data allowing the calculation of the general exposure index measure were available from 99.50% of the participants. Scores on this index ranged from 84.29 to

2,060.76 with a mean of 404.55 (SD = 266.57). The distribution of these scores was skewed positively and was leptokurtic. Notably, the highest score in this distribution is a number that is highly unlikely for the subject to have experienced because it exceeds the number of hours in the time period for which the participant was to make the judgment. Nevertheless, inclusion of this data point did not influence subsequent parameter estimates substantially, and therefore, is retained.

The media violence measures were completed by 96.40% of the respondents. Scores ranged from 1.82 to 4.91 with a mean of 2.89 and a standard deviation of .60. The distribution of these scores exhibited a slight positive skew, but otherwise approximated closely the normal distribution. The reliability of this index was estimated by correlating self and rater measures and applying the Spearman-Brown correction. The result of these calculations produced a standardized α of .80.

The four dimensions of Davis' (1983) interpersonal reactivity index, perspective taking, fantasy, empathic concern, and personal distress, were treated as alternate indicators of empathy and submitted to confirmatory factor analysis. A one factor solution fitted the data well. No error larger than .03 (absolute value) was found. Perhaps due to the content domain, this second-order dimension featured only modest reliability (standardized item a =.63). As a result, scores from these four dimensions were averaged to produce a composite empathy score. All 195 participants reported scores on this variable. This distribution approximated the standard normal curve with a mean slightly above the scale midpoint (x = 4.19; SD = .63). Scores on this variable ranged from 2.46 to 5.89.

As with empathy, the four dimensions of Buss and Perry's (1992) aggression measure were submitted to confirmatory factor analysis to derive an estimate. Verbal aggression, physical aggression, hostility and anger were treated as alternate indicators of the same underlying construct. The data were consistent with this hypothesis. Differences between the predicted and obtained correlations computed did not differ by more than .02 (absolute value). The estimate of reliability suggested an acceptable level of internal consistency (standardized item a = .80). Thus, a composite aggression score was computed. All participants completed this measure. The resulting scores approximated closely the normal distribution. The average response was below the scale midpoint (χ = 3.25; SD = .99) and scores ranged from 1.27 to 6.40.

Predictions

Homicidal thought intercorrelations. Taking the research questions and predictions in the order presented, the first two predictions involve reactive and proactive thinking. Specifically, it was expected that reactive thinking and negative affect would relate more strongly together than with any other dimensions of thought. Data were not consistent with this expectation. The correlation between these dimensions was .74 (corrected r = .85). This was the strongest association among the dimensions for either the reactive or negative affect dimensions. Ninety-five percent confidence intervals computed with the remainder of the inventory, for both reactive thinking and negative affect, resulted in consistent overlap. Thus, the strong, positive correlation between reactive thinking and negative affect is not significantly different than the other associations found between the inventory dimensions for either negative affect or reactive thought. Similar findings were obtained for the hypothesis that proactive thought would

be most strongly related to positive affect (r = .67; corrected r = .80). This correlation was not the largest in the group on these dimensions (see table 1).

In addition, it was expected that the media-related dimension of thought would be substantially and positively correlated with both proactive and reactive inventory dimensions. The data were consistent with both expectations. A tendency to think about mediated homicide increased proportionally with a tendency to think proactively about homicide (r = .76, p < .001; corrected r = .86) and also an increased disposition to reactively contemplate homicide (r = .54, p < .001; corrected r = .70).

Finally, given previous findings suggesting that mass mediated models help individuals form homicidal thoughts (Crabb, 2000), the media-related dimension of thought was expected to be related positively to thought retrospective reports of homicidal thinking. Data were consistent with this expectation (r = .23, p < .05; corrected r = .37). In fact, only the positive affect factor on the inventory was not significantly related to recalled homicidal thoughts.

Predicting the dimensions of homicidal thinking. To examine whether or not homicidal thought could be predicted by media violence exposure multivariate regression analysis was employed. Each dimension of thought was regressed onto sex, grade-point average, general media exposure, empathy, aggression and media violence exposure simultaneously. In all cases presented next, trivial predictors were removed and an abridged model was retested. Together, these equations examine the research questions involving media violence exposure, empathy, and aggression (see table 3).

The indicators of *reactive* homicidal thinking were completed by all participants. Scores ranged from nine to 41 with a mean of 19.02 (SD = 6.90). The distribution of

scores approximated closely the normal distribution, albeit with a slight positive skew. The reliability of this nine item index was estimated by Cronbach's α and found to be .86 (standardized item α = .87).

When reactive homicidal thinking was regressed on sex, grade point average, general media exposure, media violence exposure, aggression, and empathy, two substantial predictors, aggression and exposure to media violence, emerged. Inspection of scatterplots of the regression of reactive homicidal thoughts on each of these predictors produced no indication of non-linearity. Those with higher aggression reported a proportionally higher propensity for reactive homicidal thoughts (β = .35, t (179) = 4.95, p < .001). Similarly, those with more exposure to media violence reported a proportionally higher propensity for reactive homicidal thoughts (β = .20, t (179) = 2.43, p < .05). The multiple correlation of these six predictors with reactive homicidal thoughts was .48 (.45 corrected for shrinkage, F (6, 179) = 8.80, p < .001). When the extraneous predictors were removed from the regression equation no predictive ability was lost. The effect for aggression remained substantial and in the same direction (β = .37, t (185) = 5.56, p < .001), as did the effect for exposure to media violence (β = .22, t (185) = 3.27, p =.001). The multiple correlation coefficient was .47 (.46 corrected for shrinkage, F (2, 185) = 26.43, p < .001).

The second dimension assessed the predisposition to think about homicide *proactively*. All participants completed this 14-item composite. Scores ranged from 15 to 75 with a mean of 24.50 (SD = 9.74). The distribution approximated normality but did feature a slight positive skew. Reliability analysis provided evidence of high internal consistency among these items (Cronbach's α = .91; standardized item α = .92).

Two predictors emerged when this factor was regressed onto age, sex, grade-point average, aggression, empathy and media violence exposure (heretofore, the full model). As before, the scatterplots for the non-trivial predictors appeared linear. Increases in aggression were associated with proportional increases in proactive homicidal thought (β = .25, t (179) = 3.77, $p < .001$). A substantial sex association was observed indicating that men were more likely than women to report a predisposition to think proactively about homicide (β = -.34, t (179) = -4.24, $p < .001$). The multiple correlation from this full model was .56 (.53 corrected for shrinkage, $F(6,179) = 13.45$, $p < .00$). Removing the extraneous predictors resulted in an abridged model that was equally accurate in predicting the criterion (R = .55 or .54 corrected for shrinkage, $F(2,192) = 41.01$, $p <$ .00). By removing age, sex, empathy, and media violence exposure the relationship between the two non-trivial predictors remained relatively unchanged. Aggression remained stable (β = .25, t (192) = 4.00, $p < .001$), and sex improved its predictive ability slightly (β = -.42, t (192) = -6.63, $p < .001$).

A propensity to have *media-related thoughts* about homicide was estimated by forming a composite score from 10 items. All 195 respondents completed this measure. Scores on this variable ranged from 11 to 55. This distribution was slightly skewed positively, influenced by one participant who responded "strongly agree" to all items. Still, the distribution closely approximated normality and this high score was included in analyses. The mean of this dimension was 23.70 with a standard deviation of 8.42. Cronbach's and standardized item α were both equal to .86.

When this composite was regressed onto the full model the six predictors produced an ample multiple correlation of .57 (R = .55 corrected for shrinkage, $F(6, 188)$

= 15.30, $p < .001$). Three variables appeared non-trivial in the prediction of media-related homicidal thought. As both aggression ($\beta = .17$, t (188) = 2.71, $p < .01$) and media violence exposure ($\beta = .22$, t (188) = 2.87, $p < .01$) increased this dimension of homicidal thinking increased proportionally. Additionally, men reported an increased tendency to have this type of thought compared to women ($\beta = -.38$, t (188) = -4.79, $p < .001$). Revising the model to include only meaningful predictor variables did not alter these results substantially. Aggression ($\beta = .17$, t (191) = 2.67, $p < .01$), media violence exposure ($\beta = .22$, t (191) = 2.88, $p < .01$), and sex ($\beta = -.35$, t (191) = -.46, $p < .001$) all retained their predictive ability. In addition, the multiple correlation for these three predictors was .57 (.55 corrected for shrinkage, F (3,191) = 29.84, $p < .001$).

A fourth factor analyzed was the tendency to ruminate about killing under conditions of negative affect. This dimension of thought was estimated with six items. Cronbach's and standardized item α both were .90, providing ample evidence of internal consistency. The mean of this distribution was 10.74 with scores ranging from 6 to 30. The distribution was slightly platykurtic and again appeared to skew somewhat positively relative to the standard normal distribution. On the other hand, a relatively high proportion of participants reported the minimum value for this dimension. Almost 40% (n = 76) reported a total score of 6 for this factor.

The regression equation for the full model yielded a multiple correlation of .40 (R = .37 corrected for shrinkage, F(6,188) = 6.16, $p < .001$). Aggression and violence exposure emerged as non-trivial predictors in this model. Increases in both aggression (β = .29, t (188) = 3.96, $p < .001$) and media violence exposure ($\beta = .17$, t (188) = 1.97, p = .05) were associated with an increased predisposition to think about killing under

conditions of negative affect. The scatterplot data suggested that both of these relationships were linear. The regression equation was recomputed by removing the extraneous variables general exposure, grade-point average, empathy, and sex from the equation. This revised model did not lose predictive power by a meaningful amount (R = .38, or .37 corrected for shrinkage, $F(2,192) = 16.42$, $p < .001$). Aggression appeared similar in association ($\beta = .29$, $t\,(192) = 4.15$, $p < .001$) and media violence exposure predicted this type of thought tendency somewhat more strongly ($\beta = .20$, $t\,(192) = 2.85$, $p < .01$).

The counterpart to the previous dimension, positive affective thought, was assessed by using 6 items which again demonstrated some evidence of reliability (Cronbach's $\alpha = .80$; standardized item $a = .85$). All participants responded to these items. The range and distribution shape of these scores was similar to its counterpart dimension. A full 42% of the sample "strongly disagreed" that they ever think about killing in a positive affective state. One participant reported the maximum score of 30. This score contributed to the distribution's positive skew. Its mean was 9.00 with a standard deviation of 3.93.

When positive affect was regressed onto the full model only one predictor emerged clearly as non-trivial. The full model multiple correlation was .39 (R = .35 corrected for shrinkage, $F(6,188) = 5.65$, $p < .001$). However, sex appeared to be the only substantial predictor ($\beta = -.29$, $t\,(188) = -3.16$, $p < .01$) of thinking about killing under conditions of positive affect. Regressing this dimension onto sex produced a comparable solution. This univariate model produced a similar multiple correlation (β = -

.38, t (193) = -5.60, $p < .001$). It appears that men are more predisposed to thinking about killing while in a positive emotional state.

Finally, two dimensions were composed in order to estimate the frequency of homicidal thought. A tendency to have repeated homicidal thoughts was estimated using six items, however two of these items decreased the estimate of this variable's reliability (Cronbach's α = .52; standardized item a = .69). These two items were subsequently judged to be faulty due to wording ambiguity. Thus, on the basis of their low inter-item correlations and their lack of clarity, these items were removed from analyses. The resulting four items formed this composite with an improved Cronbach's a = .93 (standardized item a was equivalent). This variable was again distributed with a positive skew. Scores ranged from one to five on this index with a mean of 1.37 and a standard deviation of .67.

When this outcome variable was regressed onto the full model two non-trivial predictors emerged. The multiple correlation in this model was .32 (R = .27 corrected for shrinkage, $F(6,188) = 3.66, p < .001$). Aggression ($\beta$ = .14, t (188) = 1.89, p = .06) and sex (β = -.21, t (188) = -2.17, p =.03) were again substantial predictors of this thought dimension. Aggression increases were associated with increases in the tendency to ruminate repetitively about homicide, and men were more prone than women to report such a tendency. The abridged model was retested with only these two variables. The relationships did not change substantially. R was .32 (.30 corrected for shrinkage, $F(2,192) = 10.73, p < .001$), and both aggression ($\beta$ = .13, t (192) = 1.86, p = .07) and sex were relatively unchanged (β = -.26, t (192) = -3.54, $p < .001$) in their predictive ability.

The second estimate of frequency, independent thought, was derived by averaging scores from six items. As with repetitive thoughts, the internal consistency of this measure was attenuated by one problematic statement that correlated negatively with all but one of the other five items. Removal of this indicator resulted in a more homogenous set of items with Cronbach's $a = .75$ (standardized item $a = .83$). This variable's distribution approximated normality, albeit with a slight positive skew. The mean was 1.83 with a standard deviation of .76.

When independent thought was regressed onto the full model, aggression and sex again appeared to be non-trivial predictors in the equation. The six variables produced a multiple correlation of .53 ($R = .51$ when corrected for shrinkage, $F(6,188) = 12.11$, $p < .001$). Increases in aggression were associated positively with increases in the tendency to have multiple or different homicidal thoughts ($\beta = .30$, $t\,(188) = 4.44$, $p < .001$). The other non-trivial predictor was sex. Again, men appear more likely than women to report a predisposition to think about homicide ($\beta = -.30$, $t\,(188) = -3.60$, $p < .001$). Inspection of scatterplots indicated no evidence of non-linearity in these data.

By removing the extraneous variables in the equation, the results were robust. The strength of the association between aggression and independent thought remained stable ($\beta = .29$, ($t\,(192) = 4.50$, $p < .001$). The overall predictive ability of the equation also remained stable ($R = .52$ or .51 corrected for shrinkage, $F(2,192) = 35.41$, $p < .001$). Notably, the relationship between sex and this type of thought predisposition strengthened slightly ($\beta = -.35$, $t\,(192) = -5.53$, $p < .001$).

Finally, recall that participants were asked to list and write in some detail up to three homicidal thoughts from memory. As reported previously, 70.3% of the sample

could not recall ever having such thoughts. Of those writing thoughts, 21.5% of participants detailed one thought, 7.2% wrote two, and one percent (n = 2) could remember three. This distribution was positively skewed and leptokurtic. The mean was .40 with a standard deviation of .67.

Regressing this variable onto all six predictors resulted an equation that produced a small multiple correlation of .23 (R = .16 corrected for shrinkage, $F(6,188) = 1.80$, p = .10). Only one of the six variables emerged as a non-trivial criterion. Increases in media violence exposure were associated with a proportional increase in the ability to recall having a homicidal thought (β = .17, (t (188) = 2.00, p = .05). By removing the trivial predictors, this relationship strengthened slightly (β = .21, (t (193) = 3.00, $p < .01$).

DISCUSSION

Overall, the aim of this study was to replicate and extend the Boyson et al. (2004) investigation. The results of this survey *replicate* some of the results from previous research and extend them by gathering data using two different measures of homicidal thinking – a retrospective report measure and a scaled dispositional measure. Using an open-ended measure, 30% of the participants reported one or more homicidal thoughts, which is only slightly smaller than the Boyson et al. study (33%). Additionally, the finding that aggression was unrelated to homicidal thought was replicated as well. However, this was only found with the same open-ended measure used in previous research (retrospective reports).

Interestingly, scores on the Buss and Perry (1992) measure of aggressiveness predicted increases in six of the seven dimensions of a new inventory developed in this study to measure trait-like homicidal thought. Compared to all other predictors, aggression was the strongest and most consistent predictor of the new trait-like measure of homicidal thought. The strength of associations and the pattern of findings across multiple measurements of homicidal thought suggest that this finding is robust.

It appears that an aggressive predisposition is related positively to a predisposition to think about killing, as one might suspect. The discrepancy between the open-ended measure and the inventory tapping a predisposition for homicidal thinking is consistent with the idea that these two formats may be tapping different constructs. Retrospective reports seem to be measuring situations rather than dispositions. More work is needed to examine a broader network of associations to learn more about the possibility that these are not merely alternate indicators of the same construct.

For empathy, the results from the Boyson et al. (2004) study were not replicated. As indicated earlier, Boyson et al. (2004) found that increases in empathy were associated with increases in homicidal thought. In this study, however, an increase in empathy was not associated with an increase in either retrospective reports or trait-like thoughts about killing. It is possible the previous results were explained by sex differences, given the disproportionate number of females in the Boyson et al. (2004) sample. To examine this potential more closely, all regressions involving empathy were rerun by splitting the file by sex. Empathy did not predict either retrospective reports or trait-like homicidal thoughts for men or women in this study. This null finding requires some attention.

As mentioned, empathy was included previously because of its potential to negatively predict aggressive thought in general, and homicidal thought in specific. A null relation still is somewhat unexpected. In this sample, a negative but weak relationship was found between aggression and empathy ($r = -.12, p = .16$). These two characteristics might be expected to relate inversely more strongly than they did in this sample.

Relations between each scale's factors qualify this finding. Personal distress was positively related to the hostility and anger factors on the aggression scale. This overlap with an aggressive orientation may be clouding the overall negative relationship empathy has on this type of thought. In Davis' previous work (1983) with this empathy measure, personal distress was found to be associated positively with a "specific emotional constellation of vulnerability, uncertainty, and fearfulness" (p.121). Personal distress may be a proxy for a type of emotional regulation (or lack thereof) that promotes sensitivity to threat or harm. Under certain conditions, this sensitivity could even lead to more homicidal thinking.

Perhaps emotional vulnerability increases a fearful orientation in social contexts that in turn promotes homicidal thinking. In fact, emotional susceptibility of this sort has been studied in the context of aggressive behavior (Caprara & Pastorelli, 1989). This type of rumination may be a hallmark of only some empathic people and may serve some type of coping function. At present, it appears that an association exists between emotional susceptibility and a tendency to ruminate about transgressions in general. Further work is needed to clarify the relations between empathic tendencies and homicidal thought.

In addition to replicating previous research, this study was designed to *extend* previous work by advancing a conceptual framework for homicidal thinking that is driven by research and theory in aggressive cognitions and imagined interactions. This model was designed to estimate an individual's predispositional capacity to think about homicide by measuring seven dimensions of thought derived from cognitive, affective and frequency content domains. Although much more work is needed before conclusions can be drawn about the validity of this instrument, data were consistent with a seven-factor solution. All seven factors were strongly, but heterogeneously, related. The expectation that reactive thinking and negative affect would be uniquely related to each other was not supported by these data. Similarly, no unique association was found between proactive and positive affect thought.

At present, one can only speculate about why these profiles did not emerge. It is possible that the act of having one homicidal thought encourages others. Perhaps a single, triggering event makes future homicidal cognitions more likely. This would be true to the degree that homicidal thoughts are rewarding or gratifying. The strong positive association between proactive and reactive thoughts is consistent with this idea.

Looking across the entire inventory, only one of the dimensions failed to significantly predict retrospective homicidal thoughts. Positive affect was unrelated to retrospective thoughts. This finding is consistent with a bias in remembering negative events (Brown & Kulik, 1977). Pleasantness may negatively facilitate recall of imagined interactions (Honeycutt, Zagaki, & Edwards, 1992). Perhaps recall of homicidal thoughts is hampered likewise by positive affect, which could explain why the vast majority of retrospective thoughts come from negative events. Some evidence suggests that negative

stimuli can affect long-term memory better than neutral stimuli (Kensinger & Corkin, 2003). In this study, the positive affect dimension was conceptualized to include both neutral and positive emotions. This fact could explain the lack of association between retrospective thoughts. An evolutionary perspective also preferences memory for negative events because it is assumed that survival largely has depended on an emotional system that allows for quick retrieval of threatening or disturbing stimuli (Christianson & Engelberg, 1999).

Generally speaking, however, these results provide some criterion-related validity. A tendency to think about homicide should be positively related to actual reports of thoughts themselves. This evidence represents a promising start in building a measure that more closely fits the theoretical perspective involving homicidal ideation. Evolutionary psychologists have advanced the argument that a biologically based tendency toward homicide exists and, as a result, a tendency toward ruminating about the act. Although this tendency appears measurable, the inventory has several notable conceptual limitations that may provide some avenues for future study.

First, affect was conceived as two conceptually distinct dimensions. This distinction is made possible by considering how a person feels before having a homicidal thought. These dimensions do not examine the valence of emotion following a homicidal thought. Doing so would more closely match Honeycutt's (2003) viewpoint of imagined interactions. Reports suggest that imagining social encounters can produce positive affect (Kroll-Mensing, 1992). However, when conflict is measured, others have found that negative affect is more likely to result (Honeycutt et al., 1992). More detailed descriptive analysis of homicidal thoughts, the conditions that produce them, and how

individuals feel about their thoughts after having them could be used to extend the present conceptualization of homicidal thinking.

A second limitation is related. As mentioned, the act of composing a homicidal thought may be an important coping mechanism, perhaps as a way to reduce anxiety or uncertainty. Beck's (1999) findings that some individuals are prone to converting hurtful feelings to hateful ones as a way to manage self-esteem lend further credence to this possibility. From either a cognitive or emotional standpoint, the present conceptualization does not allow for the possibility that people cope with perceptually severe social exchanges by thinking about killing. It even may be possible that an imagined homicidal interaction makes one less likely to behave aggressively – either in terms of homicide or general aggressive behavior. For example, Kroll-Mensing (1992) also found that imagined interactions were helpful in resolving conflict. The present inventory is better suited to estimate the motivations or uses for homicidal thinking. Additional work needs to be done to examine the gratifications received from this type of thought. Research related to imagined interactions clearly supports the idea that gratifications play a key role in determining the frequency and type of thoughts people have (Honeycutt, 2003).

A third aim of this investigation was to examine more closely the relationship between media violence and homicidal thought. Media violence exposure was considered holistically, summing across content consumed from movies, television, video games, and music. An attempt was made to account for differing perceptions of violent content by including violence ratings from both the participant's and the researcher's perspectives. As in Crabb (2000) and Boyson et al. (2004), the pattern of these data

suggests that media violence exposure may play an important role in homicidal thinking. The frequency of retrospective reports of homicidal thoughts was again predicted by violence exposure. In fact, it was the only non-trivial predictor retained from the full model (i.e., aggression, sex, grade-point average, empathy and general exposure were trivial).

This relationship between violence exposure and thinking about killing is less clear when considering results from the trait-like measure. As expected, a predisposition to think about media-related homicide was positively related to exposure to media violence. But overall, media violence was retained in only four of the seven dimensions of thought. The clearest pattern in the data suggests that violence exposure is related to reactive thoughts, under conditions of negative affect, and with increases in a tendency to think about homicide in the mass media. To explore the influence sex may have on these relationships, the file was split and partial correlations were computing controlling for the only other variable that appears to play a key role (i.e., aggression; see table 4). It appears that the pattern indicative of reactive, negative, and media-related thoughts is even stronger when considering only females. In fact, associations between media violence and homicidal thought remained significant only for women, and not for men. If media violence exposure is an antecedent of homicidal thinking, these data suggest that women may be attending to or processing violence in the media quite differently than there male counterparts.

At least three limitations in the present design are noteworthy. First, exposure to media violence was measured in terms of a "drip" orientation rather than from a "drench" perspective (Greenberg, 1988). The drench hypothesis posits that the same dosage of

media images may impact people quite differently. Dramatic portrayals of homicide may be highly impressionable images for some people. Given their severity, and often graphic nature (particularly in movies), this hypothesis seems plausible. The potential effect of one or two high impact scenarios involving killing on homicidal thought is unaddressed in this study.

Second, homicide exposure in specific has not been measured well. In this study, participants were asked to retrieve from memory homicide exemplars from the mass media. This measure was problematic. It did not relate well to overall media exposure or media violence exposure in specific but this may be an artifact of the way media violence was measured. Retrieving and writing down homicide exemplars requires high involvement on the part of the participant. This measure may best be obtained separately, when students are not fatigued from answering other questions. Several of the students interviewed following the survey made statements suggesting the instrument was too long or took too much time to complete.

To be sure, most people have little or no direct experience with homicide, composing a thought involving murder seems most likely to be derived from comparable scenes involving similar outcomes. This possibility is more in line with the drench hypothesis. General media violence exposure over time could be impacting homicidal thinking by developing more well-developed schemata involving all forms of aggression which could facilitate the construction of homicidal thoughts indirectly. The present results are consistent with this possibility, but measures of exposure that account for identification and involvement with characters and content in the mass media may also be important.

Third, despite the assumptions in the regression models used here, no statements can yet be made about the causal ordering of media violence and homicidal thinking. It is plausible that a tendency to think about homicide could predispose an individual to seek out homicidal scenes and images so often presented in the mass media. No studies speak directly to this possibility, including this one. Indeed, research in the area of media violence and aggression suggests that the link between media violence and aggression may be bi-directional (Eron, Huesmann, Lefkowitz, & Walder, 1972; Fenigstein, 1979). Given the evolutionary perspective that has been invoked to explain this type of thought, the likelihood that media violence exposure is a consequent of homicidal thought tendency is even more plausible. How these two variables are related causally deserves more attention.

To date, homicidal thought has received very little empirical attention. Taken as a whole, evidence is mounting that suggests homicidal thinkers are not hard to find, at least among undergraduate students. That said, however, this small body of research has relied on non-probability samples from a population that may well be more "psychologically healthy" at least in terms of aggressive cognition and behavior. The findings presented here suggest that many people may be predisposed to homicidal thought but cannot remember having them well enough to write them down in open-ended form. Drawing conclusions about the normality of homicidal thought should be tempered. Homicidal ideation could either be less or more common in broader populations, depending on the psychological function it serves.

Several questions stemming from the idea of normality are relevant to this literature. What distinguishes the homicidal ideation of psychiatrically normal and non-

normal patients? Empirical analyses of clinically diagnosed patients seem to suggest that homicidal thinking is just as common as it is for undiagnosed people. The inventory presented here could be used to distinguish those who fixate on one or a set of thoughts about homicide and to explore other factors that may play a role in this fixation, such as media-related thoughts about homicide.

Perhaps the primary question yet to be answered is whether or not homicidal thoughts facilitate homicidal behavior. Fitting homicidal thinking into process models of aggressive behavior could help answer this question. These models currently suggest that aggressive thoughts mediate aggressive behavior. This is a somewhat troubling possibility, given the frequency with which people seem to be having homicidal thoughts. Correlates and consequences of homicidal thinking may yet reveal protective and risk factors associated with this type of thought, including whether or not media violence exposure enhances, attenuates, or simply alters the nature of homicidal thinking.

FOOTNOTES

[1] In other words, no evidence is expected showing that each dimension is tapping the same broader concept. At present, the inventory is not expected to examine a unitary latent construct. While there is some evidence guiding the formation of each dimension there is little reason to expect them to relate with one another in a second-ordered factor structure.

[2] For example, a person listing 3 favorite TV shows would have their violence rating averaged for each show listed. To take into account missing data, the average violence score for TV would be multiplied by three. This procedure was done for each medium. To get an overall media violence exposure score, the medium scores were also averaged. This procedure was followed for both subjective (participant) and

objective (coder) ratings with one exception. Because two independent coders were used, the average of their violence ratings was used to assign a value to each media selection listed. For example, if coder 1's TV ratings were 2, 3, 4, 1 and coder 2's TV ratings were 2, 2, 2, 1, the score would be computed by (2+3+4+1/4) + (2+2+2+1/4)/2.

[3] This definition comes from the National Television Violence Study (see, Smith et al., 1998). That definition focuses on a credible threat of physical harm by one animate being to another.

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APPENDIX

Figure 1 - The Proposed Structure of a Predisposition to Think about Homicide

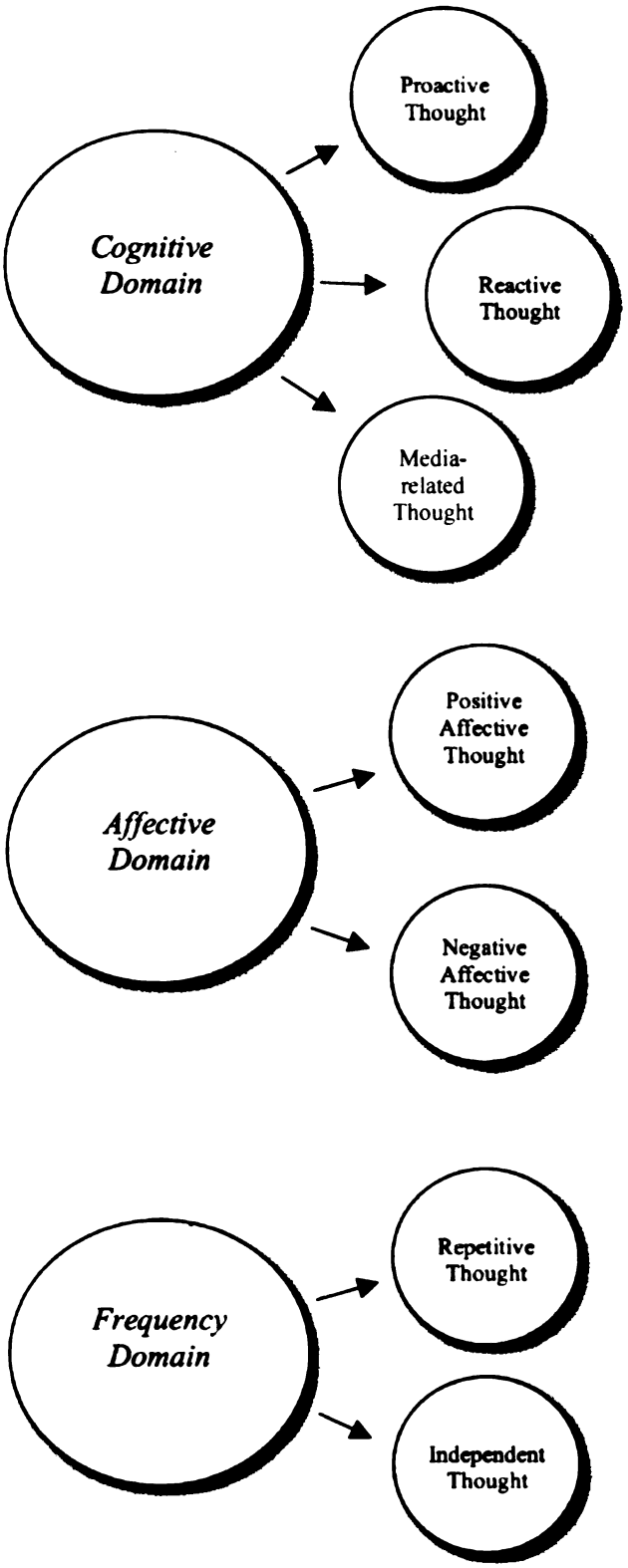

Figure 2 – An Inventory of Homicidal Fantasizing Capacity

Reactive Thought

1. Given enough aggravation, I may think about killing someone.
2. I can think of no situation that warrants a homicidal thought.
3. If someone threatens me, I may think about killing that person.
4. I would have no trouble thinking about killing a child molester.
5. When I see someone else attacked, I may think about killing the person who hurt them.
6. If someone were to humiliate me in public, I may have a homicidal fantasy.
7. If I were to have a fight with a romantic partner, I might have a homicidal fantasy.
8. If a boss at work were to reprimand me unfairly, I may have a homicidal fantasy.
9. I can imagine having a family argument that might result in a homicidal fantasy.

Proactive Thought

10. I may think about killing another person just to pass the time.
11. When I'm alone with my thoughts, I may conjure a homicidal thought.
12. I would only have homicidal thoughts if someone threatened me.
13. I admit that it would be interesting to know how it feels to kill someone.
14. I could fantasize about killing someone for no good reason.
15. I would have no trouble thinking about killing a stupid person.
16. I would love to work for the CIA or the FBI, even if it meant I would have to kill someone.
17. Thinking about killing is cathartic for me.
18. As I daydream, I may fantasize about killing someone.
19. I sometimes wonder what it would be like to be a hit man.
20. Fantasies about killing another person in battle, or war, are interesting to me.
21. I have imagined killing someone as a way to get what I want.
22. I could have a homicidal fantasy about killing someone over money.
23. When I let my imagination run, I could have homicidal fantasy.
24. If someone paid me enough, I could be an assassin.

Media-related thought

25. When I'm at the movies, I have fantasized about being a killer.
26. I am attracted to media characters, like James Bond, who sometimes have to kill for a living.
27. When I see someone commit murder on television, I sometimes imagine what it might be like to do that.
28. I don't mind listening to music that talks about killing.
29. I think it would be fun to play video games that involve killing.
30. I have a tendency to replay in my mind TV or movie scenes involving death.
31. My thoughts about killing are informed by things I've seen in the mass media.
32. I have no trouble thinking about movie or TV scenes involving killing.

33. I sometimes find myself imagining what it would be like to kill someone like I see on television.
34. Of all types of media characters, I identify most with action-adventure heroes.
35. I have pretended to kill people like I see on television or in the movies.

Negative affect thought

36. I have been so mad that I could think about killing someone.
37. The rage I feel sometimes could cause me to think about killing someone.
38. I get so stressed out, sometimes, homicide sometimes crosses my mind.
39. At times, I have been so scared that I had a homicidal thought.
40. I can imagine becoming angry enough to have a homicidal fantasy.
41. I have been fearful enough to imagine killing someone.

Positive affect thought

42. My homicidal fantasies are enjoyable to me.
43. I don't find my homicidal fantasies disturbing.
44. I don't just have homicidal fantasies when I'm mad or angry.
45. I rather like having a homicidal fantasy.
46. The idea of having a homicidal fantasy sounds kind of thrilling to me.
47. I become aroused when I imagine killing another person.

Repetitive thought

48. I have had a recurring fantasy about killing the same person.
49. When I have had a homicidal thought I tend NOT to dwell on it.
50. I can remember obsessing about killing a person for days.
51. Sometimes my mind replays the same homicidal fantasy over and over.
52. My thoughts about killing have involved just one or two people.
53. Under some circumstances, I may contemplate killing someone for days.

Independent thought

54. I am pretty sure that I've had homicidal thoughts, but I can't remember any of them right now.
55. I sometimes have homicidal fantasies.
56. I have all kinds of imaginary thoughts about killing.
57. I have homicidal fantasies quite often.
58. I can't remember ever having a homicidal thought.
59. I could have many, different fantasies about killing.

Table 1

Intercorrelations Between Indices of Homicidal Thinking

Dimension	1	2	3	4	5	6	7	8
				(n = 186)				
1. Thought Recollections	-	.43***	.30***	.23**	.39***	0.11	.31***	.46***
(*Mean*=.40, *SD*=.68)								
2. Reactive Factor		-	.67***	.54***	.74***	.47***	.56***	.64***
(*Mean*=19.26, *SD*=6.91)								
3. Proactive Factor			-	.76***	.58***	.67***	.57***	.68***
(*Mean*=24.82, *SD*=9.85)								
4. Media Related Factor				-	.55***	.54***	.46***	.59***
(*Mean*=24.02, *SD*=8.46)								
5. Negative Affective Factor					-	.47***	.63***	.66***
(*Mean*=10.93, *SD*=5.73)								
6. Positive Affective Factor						-	.53***	.53***
(*Mean*=9.05, *SD*=3.95)								
7. Repetitive Thought							-	.61***
(*Mean*=1.36, *SD*=.64)								
8. Independent Thought								-
(*Mean*=1.86, *SD*=.76)								

*$p < .10$, **$p < .05$, ***$p < .001$

Table 2

Correlations Between Predictor Variables

Scale	1	2	3	4	5	6
		(*n* = 186)				
1. General Media Exposure	-	-0.01	.21**	-0.12	0.04	0.11
(*Mean* = 404.55; *SD* = 266.57)						
2. Empathy		-	-0.12	.33***	-0.04	-.19**
(*Mean* = 4.19; *SD* = .63)						
3. Aggression			-	-.28***	0.02	.23**
(*Mean* = 3.25; *SD* = .99)						
4. Sex				-	0.03	-.59***
(60% female)						
5. Overall Grade Point Average					-	0.01
(*Mean* = 2.97; *SD* = .46)						
6. Media Violence Exposure						-
(*Mean* = 2.89; *SD* = .60)						

**p*< .10, ***p*< .05, ****p*< .001 Sex coded as 1 = male, 2 = female. In all other cases, higher scores indicate greater amounts of variables.

Table 3

Summary of Non-trivial predictors of Homicidal Thought

Variable	*B*	*SE B*	*β*
	Reactive Thought *(df = 185)*		
Aggression	2.61	.47	.37***
Violence Exposure	2.55	0.78	.22**
	Proactive Thought *(df = 191)*		
Aggression	2.47	0.62	-.25***
Sex	-8.34	1.26	-.42***
	Media-Related Thought *(df = 183)*		
Agression	1.44	0.54	0.17**
Sex	-6.02	1.31	-.35***
Violence Exposure	3.06	1.7	.22**
	Negative Affect Thought *(df = 184)*		
Aggression	1.67	.40	.29***
Violence Exposure	1.9	.67	.20**
	Positive Affect Thought *(df =187)*		
Sex	-3.03	0.54	-.38*
	Repetitive Thought *(df = 187)*		
Sex	-0.35	0.1	-.26***
Aggression	.09	.05	.13*
	Independent Thought *(df = 190)*		
Sex	-0.56	0.1	-.36***
Aggression	0.22	0.05	.30***
	Thought Recollections *(df = 186)*		
Violence Exposure	0.24	0.08	.22**

*$p < .10$, **$p < .05$, ***$p < .001$ Sex coded as 1 = male, 2 = female. In all other cases, higher scores indicate greater amounts of variable.

Table 4

Partial Correlations Between Media Violence & Homicidal Thought Measures, Controlling for Aggression

	Media Violence Exposure		
	Whole Sample	Just Men	Just Women
Reactive Thought	.18; N=183; p =.02	.08; N=71; p=.51	.24; N=110; p=.01
Proactive Thought	.09; N=183; p=.24	.04; N=71; p=.74	.15; N=110; p=.11
Media-Related Thought	.21; N=183; p=.01	.12; N=71; p=.37	.31; N=110; p=.001
Negative Affect Thought	.14; N=182; p=.05	.01; N=71; p=.93	.24; N=109; p=.01
Positive Affect Thought	.06; N=178; p=.45	.12; N=71; p=.31	.01; N=105; p=.93
Independent Thought	.09; N=182; p=.21	.13; N=71; p=.29	.05; N=109; p=.59
Repetitive Thought	.06; N=179; p=.40	.001; N=71; p=.99	.13; N=106; p=.18