

Social and Economic Costs of Violence

WORKSHOP SUMMARY

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THE CONTAGION OF VIOLENCE: THE EXTENT, THE PROCESSES, AND THE OUTCOMES

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One of best-established findings in the psychological literature on aggressive and violent behavior is that violence begets violence. This contagion of violence appears to be a universal phenomenon. The contagion of violence occurs within families. Violence between partners increases the risk of violence directed at children and increases the risk of the children behaving violently themselves. Having one violent individual in a family makes it more likely there will be others. It is true within peer groups. Violence by some peers increases the risk of violence by others. Violence by peers directed outward not only stimulates violence by others that is directed outward, but stimulates violence between peers within the group. This is true in neighborhoods and communities. Violent communities and neighborhoods breed violence in those who join the community or neighborhood. Introducing violence into a community increases the risk of greater violence throughout the community. It even appears to be true within nations and cultures, and it is true across generations. Children “catch” it from their parents, and parents can catch it from their children.

Violence is highly contagious. Not only is it spread from the perpetrators of violence to the victims, but it is spread to onlookers and observers. It is not surprising that violent victimization leads to violent retaliation within and between families, peer groups, schools, communities, ethnic groups, cultures, and countries. What may be more surprising to some is that simply the observation of violence also leads to increased violence within and between all of these groups. Violence can even be spread to faraway people who observe it at a distance. The boundaries of time and space that apply to most biological contagions do not apply to the contagion of violence.

Why is violence so contagious and how does it spread? What psychological processes are involved? How could the spread be halted? These are some of the questions addressed in this paper.

Severe violent behavior is almost always the product of predisposing individual differences and precipitating situational factors (Huesmann, 1998). One important environmental experience that contributes both to predisposing a person to behave more violently in the long run and to precipitating violent behavior in the short run is the observation of violence. Psychological theories that have emerged over the past few decades now

explain the short-term precipitating effects mostly in terms of priming, simple imitation, and excitation transfer. Priming is the neurological process through which seeing violence produces a spreading activation in the neurons of the brain that stimulates all sorts of ideas related to violence, making violence more likely. Imitation of violence in the short run occurs because human beings, from a very young age, have a wired-in tendency to mimic whatever they see. Excitation transfer means that when someone provokes us, we feel more angry if we have recently been aroused and made angry by something we observed, such as violence.

The long-term predisposing effects of observing violence, however, involve more complex processes of observational learning of cognitions and of emotional desensitization. Obviously being victimized always also includes observing violence—part of the mind of the child who is being spanked or the youth who is being beaten up is observing the interaction while another part is suffering from the interaction. Although the emotional reactions to victimization may be more intense and immediate, observation alone also produces both intense emotional and intense cognitive reactions that can have long-term effects on a person's mental health (e.g., post-traumatic stress disorder [PTSD] symptoms) and behavior problems (e.g., violent behavior). This is diagrammed in Figure 6-1.

Before elaborating on these processes for the contagion of violence in more detail, I want to present an example of the phenomenon of contagion of violence through observation. Probably no children in the world are exposed to more violence on a day-in and day-out basis than those who live in regions of war and ethnic violence. They are regularly exposed to scenes of extreme human violence at rates that would be hard to find even in America's most violent ghettos. My research team has just finished collecting data on children in one such region—Palestine (West Bank and Gaza) and Israel (Israeli Jewish and Arab communities). We interviewed 600 Palestinian, 450 Arab Israeli, and 450 Jewish Israeli children and their parents individually three times at 1-year intervals from 2007 to 2010. At the start of the interviews the children were either 8, 11, or 14 years old. Each year we asked the children and their parents to report on how much violence they had been exposed to in the past year. For example, we asked, "How often have you seen right in front of you Palestinian (or Israeli for Israeli children) buildings or buses or other property destroyed by Israelis (or Palestinians for Israeli children)?" We asked many questions of this type, including about "seeing a family member die," "seeing friends die," "seeing them injured," "seeing them held hostage or tortured," etc. The rates of observation in person were very high—for example, 55 percent of Palestinian children had seen a friend die due to the Israelis, 43 percent had seen someone tortured or held hostage, and 63 percent had seen someone crying because someone they knew had died. The rates of seeing

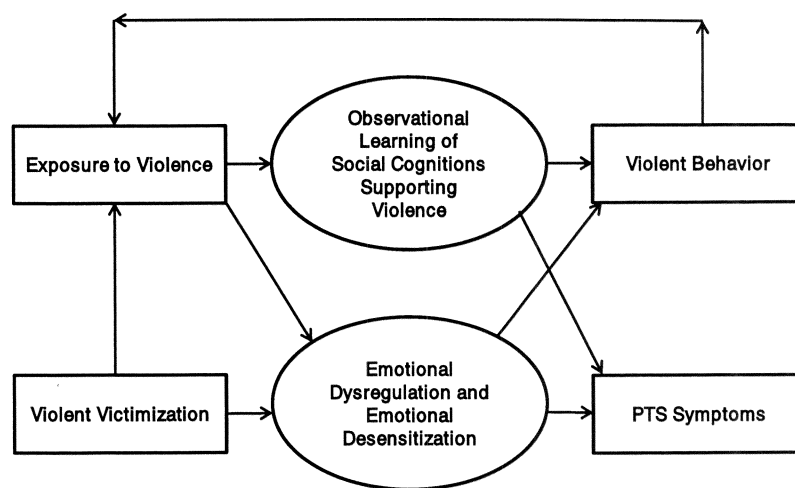


FIGURE 6-1 The psychological processes promoting the contagion of violence. SOURCE: Huesmann, 1988.

such things rose to more than 90 percent for the past year when observing in the mass media was included. The rates for Israeli Jewish children were about half as much and for Israeli Arab children half as much again, but even among them, about 1 out of every 20 children had seen someone killed or be seriously injured in front of them in the past year.

These rates are appallingly high. The question is, Does such exposure to such violence increase the aggressive and violent behavior of the children subsequently? The answer, we discovered, is clearly yes. The violence spreads like a contagious disease among them. For example, as shown in Figure 6-2, Palestinian kids and Israeli Jewish kids who fall in the top 25 percent on the amount of war violence they have seen in 1 year are 15 percent more likely to punch or beat a peer than kids who fall in the lowest 25 percent on violence exposure, and Arab Israeli youth in the highest quartile on exposure are about 30 percent more likely to punch or beat a peer during the year. These youth have not been victimized by their peers; yet they attack their peers. In fact, we found that those who are in the highest 25 percent on exposure are also significantly more likely to go beyond "punching" and to commit very serious acts of violence against their peers, including using knives or guns on them. These results cannot be explained by demographic differences, age differences, or gender differences. Differences in exposure to violence account for more of the individual differences in aggression than any other single factor.

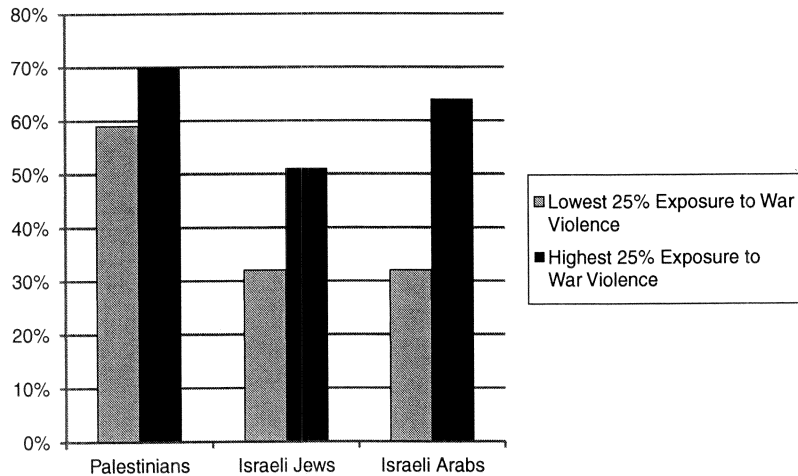


FIGURE 6-2 Children behave more violently as they see more war violence in the Middle East: Percentage that punched or beat another youth in the last year.

Because we collected the data over 3 years, we can also rule out the idea that more violent or aggressive youth expose themselves to more war violence. No, the direction of the effect is clearly that exposure to violence stimulates later increases in aggression even after we control for initial differences in aggression. For example, for 8- and 11-year-olds the causal path coefficients from exposure to violence in year 1 of the study to change in aggression from year 1 to year 3 are about .30, while the causal path coefficients from aggression in wave 1 to increases in exposure to war violence between wave 1 and wave 3 are about 0. For the oldest cohort only is there some evidence that aggression makes later exposure more likely, but it is significantly smaller than the effect that exposure has on later aggression.

What produces this kind of contagion of violence over time? The contagion is promoted by the fact that children grow up in an ecology of nested spheres of influence in which, as Bronfenbrenner (1979) and Sameroff (2010) have pointed out, macro-environments such as war settings influence micro-environments such as the family, which in turn affect the child who in turn affects the micro-environments around him or her. Children are most directly influenced by a micro-system of influences that are close to them—most notably, family and peers. However, family and peers in turn are influenced by the schools and communities in which they reside, and these in turn are influenced by more distal systems such as the ethnopolitical culture, the mass media, and the country. These ecological systems are not independent. Each influences and is influenced by the systems within which

it is nested and by the systems nested within it. Thus, violence or non-violence in a country influences violence in communities and subcultures, which influences violence in schools and families, which influences violence in youth. This is exactly what we have found in our study of Palestinian and Israeli youth. In regions where more war violence occurs, we found more intracommunity violence and more intrafamily violence. These in turn stimulate more youth violence.

However, this ecological proximity effect does not explain why violence is so contagious that it is spread by observation alone, even if the observation is at some physical distance. The answer to this puzzle is provided by the way in which the human information processing system has evolved to make humans adaptive for survival—in particular, by evolving mechanisms for encoding cognitive scripts to imitate observed behaviors of others (observational learning) and by evolving mechanisms for adaptation to emotionally disturbing environments to reduce the stress they produce (desensitization).

We know that all social behavior is guided by encoded scripts (programs for behavior) that we all have acquired as we grew up. When confronted with a social problem, young people first make attributions about what is going on in the situation and then retrieve from their minds whatever social scripts are most easily recalled and seem most relevant. These generally are scripts that are most strongly primed by the social situation and have been most strongly learned from past experiences. Thus, a boy who has grown up observing violence around him almost every day (whether war violence, neighborhood violence, gang violence, school violence, or family violence) will believe that the world is a hostile place and will be biased toward making hostile attributions about those who annoy him. Such attributions and the repertoire of aggressive scripts the boy will have encoded over time will then make it more likely that he will use an aggressive social script for dealing with such a person. Additionally, he will be more likely to view behaving in such an aggressive manner as normative and acceptable. Equally importantly, repeated exposures to violence will blunt the negative emotional responses (anxiety and fear) that humans normally experience when they see violence or think about violence. What will remain is the angry emotional distress that, through excitation transfer, can exacerbate the young person's tendency to behave aggressively. Thus, the more a young person is exposed to war violence, the more likely he or she is to behave violently toward others, even though the others may have no connection to the war violence. This process is illustrated in Figure 6-3, which is taken from our recent study of Palestinian and Israeli youth. The numbers in this diagram show the strength we found for the causal effects represented by the arrows. The 14-year-olds in this diagram who have been exposed to the most political conflict or violence in year 1 fantasized more

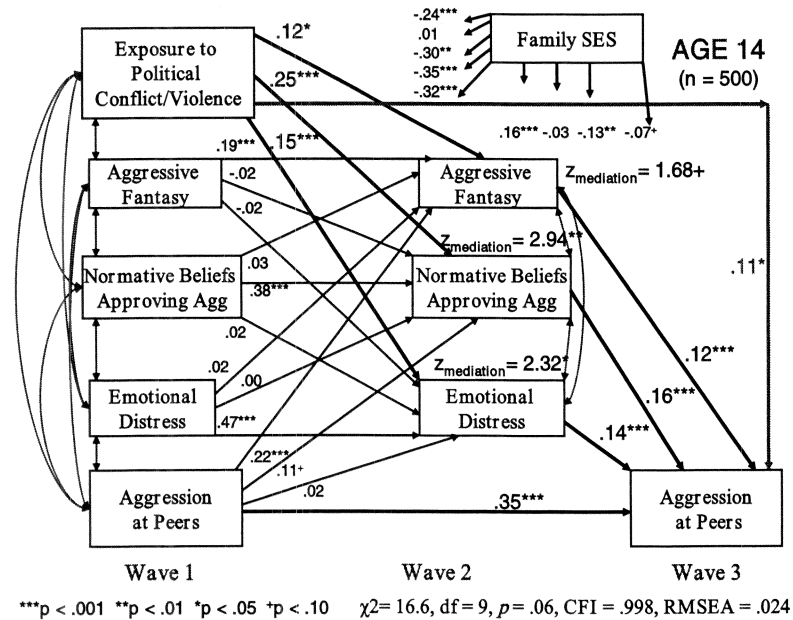


FIGURE 6-3 Exposure to violence stimulates later increases in aggression.

about behaving aggressively in year 2 (that is, they rehearse aggressive scripts more), held stronger beliefs that aggressive behavior toward others is okay in year 2, and showed higher levels of emotional distress in year 2. Each of these effects in turn stimulated them to behave more aggressively toward their peers in year 3.

Summary

Violence is clearly contagious. While being victimized by violence promotes more violence, all that is really required is viewing violence. There are now many other examples in the scientific literature, besides the one discussed above, that demonstrate how habitual observation of violence by young people leads to behaving more aggressively. Violence is contagious in multiple contexts. It is contagious in the short run and in the long run. The contagion is mediated by both changes in emotions and changes in cognitions caused by repeated exposures to violence. These neurological and psychological reactions are “wired-in” and probably evolutionarily adaptive. Consequently, it is difficult to intervene to prevent the contagion of violence other than by preventing the observation of violence. However,

the most promising additional interventions would undoubtedly be those that are directed at counteracting the changes in cognitive and emotional processing that the observation of violence engenders.

HOW PERSISTENT FEAR AND ANXIETY CAN AFFECT YOUNG CHILDREN'S LEARNING, BEHAVIOR, AND HEALTH⁵

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Evidence from neuroscience is increasingly helping us to understand exactly how fear and anxiety in childhood—such as that occasioned by exposure to violence in the family—shape the young child's developing brain, with lasting effects on learning and development. In this article, Professors Nathan A. Fox and Jack P. Shonkoff review the evidence and its implications for public policy.

Ensuring that young children have safe, secure environments in which to grow, learn, and develop healthy brains and bodies not only is good for the children themselves but also builds a strong foundation for a prosperous, just, and sustainable society. That said, science shows that early exposure to violence and other circumstances that produce persistent fear and chronic anxiety can have lifelong consequences by disrupting the developing architecture of the brain. While some of these experiences are one-time events and others may reoccur or persist over time, all of them have the potential to affect how children learn, solve problems, relate to others, and contribute to their community.

All children experience fears during childhood, including fear of the dark, monsters, and strangers. These fears are normal aspects of

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development and are temporary in nature. In contrast, threatening circumstances that persistently elicit fear and anxiety predict significant risk for adverse long-term outcomes from which children do not recover easily. Physical, sexual, or emotional abuse; significant maltreatment of one parent by the other; and the persistent threat of violence in the community are examples of such threatening circumstances.

Unfortunately, many children are exposed to these kinds of experiences. Child maltreatment has been shown to occur most often in families that face excessive levels of stress, such as that associated with community violence, parental drug abuse, or significant social isolation (CDC, 2009). Research also tells us that nearly half of children living in poverty in the United States witness violence or are indirectly victims of violence (Finkelhor et al., 2005). Globally, despite more limited data, the risks are as bad or worse. In 2006, the United Nations Secretary-General's Study on Violence against Children reported that more than 130 million children have witnessed intimate partner violence in the home, and more than 200 million have suffered some form of sexual abuse. For children living in such circumstances, frequent and repetitive threats create the potential for heightened fear and chronic anxiety.

Behavioral neuroscience research in animals tells us that serious, fear-triggering experiences elicit physiological responses that affect the architecture of the developing brain. Chronic activation of the body's stress response systems has been shown to disrupt the efficiency of brain circuitry and lead to both immediate and long-term problems in learning, behavior, and physical and mental health. This is especially true when stress system overload occurs during sensitive periods of early brain development. Despite this rapidly increasing knowledge base, however, significant gaps continue to exist in how societies respond to the developmental needs of children who regularly experience serious, fear-inducing events.

The Science of Fear and Anxiety

Some types of fear are normal aspects of development. Infants begin to experience feelings of fear and differentiate them from other emotions between 6 and 12 months of age (Lewis and Michalson, 1983; Nelson and DeHaan, 1996). Over the course of the early childhood period, toddlers and preschoolers typically express fear of a wide variety of events or individuals. Generally speaking, normal preschool fears do not disrupt a child's life, and they dissipate by age 7 or 8. That is, while children may express these fears at certain times (such as bedtime) or in response to certain events (for example, when confronted by a stranger), their overall behavior does not otherwise suggest that they are generally fearful or distressed.

The emergence and course of typical childhood fears are different from the fears and anxiety elicited by traumatic situations such as physical or sexual abuse or exposure to family violence. While typical fears disappear with age, the fear and anxiety elicited by maltreatment and other threatening circumstances do not. Scientific research provides an explanation for why children outgrow normative fears. Many result from the difficulty young children have in distinguishing between the real and the imaginary. As they get older, children get better at understanding what is real and what it means for something to be "make believe." They also develop the cognitive and social skills needed to better understand predictability in their environment and, therefore, gain a greater sense of control.

Early exposure to extremely fearful events affects the developing brain, particularly in areas involved in emotions and learning. A large and growing body of research, including animal studies as well as recent neuroimaging studies of human adults, has revealed groundbreaking insights into the brain circuitry that underlies how we learn to be afraid (Delgado et al., 2006; Phelps and LeDoux, 2005) and how we come to associate a specific event or experience with negative outcomes. Two extensively studied structures located deep in the brain—the amygdala and the hippocampus—are involved in fear conditioning. The amygdala detects whether a stimulus, person, or event is threatening and how persistent fear and anxiety can affect young children's learning, behavior, and health; the hippocampus links the fear response to the context in which the aversive stimulus or threatening event occurred (Kim and Fanselow, 1992; LeDoux, 2000; LeDoux and Phelps, 2008). Studies also show that both the amygdala and the hippocampus play an important role in how the body then responds to this threat. Elevated stress hormones such as cortisol have been shown to affect the growth and performance of the hippocampus and the activity of the amygdala in rodents and nonhuman primates, and early and persistent activation of the stress response system adversely affects brain architecture in these critical regions.

Beyond its impact on these two brain structures, heightened stress has also been shown in animals to impair the development of the prefrontal cortex, the brain region that, in humans, is critical for the emergence of executive functions—a cluster of abilities such as making, following, and altering plans; controlling and focusing attention; inhibiting impulsive behaviors; and developing the ability to remember and incorporate new information in decision making. These skills continue to develop and become increasingly important throughout the school years and into adulthood. Behavioral neuroscience research in animals tells us that the prefrontal cortex is highly sensitive to the detrimental effects of excessive stress exposure and that its developing architecture is vulnerable to the negative effects of chronic fear (Arnsten, 2009).

When young children experience serious fear-triggering events, they learn to associate that fear with the context and conditions that accompanied it. Very young children can actually learn to be fearful through a process called “fear conditioning,” which is strongly connected to the development of later anxiety disorders (Grillon and Morgan, 1999; Pine, 1999). In the typical circumstances of early childhood, fear responses are activated quickly and then dissipate. However, when young children are chronically exposed to perceived or real threat, such as ongoing violence in the family environment, fear system activation can be prolonged. Conditioned fear is apparent when individuals come to experience and express fear within the context in which the learning occurred. For example, a child who is physically abused by an adult may become anxious in response to both the person and the place where the fear learning occurred. Over time, the fear elicited and the consequent anxiety can become generalized, and subsequent fear responses may be elicited by other people and places that bear sometimes only small resemblances to the original conditions of trauma. Consequently, for young children who perceive the world as a threatening place, a wide range of conditions can trigger anxious behaviors that then impair their ability to learn and to interact socially with others. The extent to which these problems affect physical and mental health is influenced by the frequency of the stressful exposure and/or the emotional intensity of the fear-eliciting event.

Unlearning fear is a fundamentally different process from fear learning. The process of unlearning conditioned fear is called “extinction” and actually involves physically separate and distinct areas of the brain’s architecture from those into which fear responses are first incorporated. Generally speaking, the unlearning process involves activity in the prefrontal cortex, which decreases the fear response by regulating the activity of the amygdala (Phelps et al., 2004; Quirk et al., 2006). Research tells us that fears are not just passively forgotten over time, they must be actively unlearned. Studies show that fear learning can occur relatively early in life (Sullivan et al., 2000), whereas fear unlearning is only achieved later, when certain structures in the brain have matured (Carew and Rudy, 1991; Kim and Richardson, 2008). Consequently, the effects of family violence in early childhood can have a significant impact on physical and mental health that can take years to remediate—something that is extremely important to understand in designing interventions for children and families who are experiencing violence.

Chronic and intense fear early in life affects the development of the stress response system and influences the processing of emotional memories (Nemeroff, 2004; Sanchez et al., 2001). When an individual is confronted with a threat, stress systems are activated and elevate the levels of several different stress chemicals that are circulating throughout the body

(McEwen, 2007). An increase in one of those chemicals, cortisol, can have a dramatic impact on how memories are processed and stored (de Kloet et al., 2008). The production of cortisol and adrenaline (as well as noradrenaline) in the brain in a normal stress response leads to memory formation for events and places that signify danger. More specifically, elevated cortisol levels can strengthen the formation of memories of emotional events (McGaugh et al., 1996), block the ability to unlearn fear memories (Yang et al., 2007), and enhance the formation of memories of the surrounding context in which the fearful event occurred (Brinks et al., 2008). Interestingly, too much cortisol can also have the opposite effect and actually impair memory and learning in nonthreatening contexts (Roosendaal et al., 2009). Thus, the biological response to stress is intimately involved in both fear learning and fear unlearning.

Persistent fear can distort how a child perceives and responds to threat. Fear learning typically takes place in specific contexts and results in those fears’ becoming associated with the places where the learning occurred. Children may also express fear in response to situations that are similar (not identical) to those initially learned or to situations that are similar to the contexts in which the original learning occurred. These are called “generalized” fear responses, and they are thought to underlie the expression of later anxiety disorders, including PTSD (Davis, 2006; Grillon, 2002; Grillon and Morgan, 1999). Indeed, children who have had chronic and intense fearful experiences often lose the capacity to differentiate between threat and safety. This impairs their ability to learn and interact with others, because they frequently perceive threat in familiar social circumstances, such as in their home or neighborhood. These responses inhibit their ability to learn and often lead to serious anxiety disorders (Grillon et al., 1998; Reeb-Sutherland et al., 2009).

Young children who have been exposed to traumatic circumstances also have difficulty identifying and responding to different expressions of emotions and, therefore, have trouble forming healthy relationships (Wisner Fries et al., 2005). These deficits lead to general problems with social interaction, such as understanding others’ facial expressions and emotions. For example, children raised in physically abusive households show heightened sensitivity (compared with nonabused children) to angry faces, which negatively affects their brain function and behavior (Pollak and Kistler, 2002; Pollak et al., 2000). Learning to identify anger—quickly and successfully—in order to avoid being harmed is a highly adaptive and appropriate response to an abusive environment. However, an increased tendency to assume someone is angry when his or her facial expression is ambiguous can be inappropriate and maladaptive in a typical, nonthreatening social setting and even dangerous in unfamiliar social settings (Pollak, 2008). Thus, the extent to which children view the world as a hostile and

threatening place can be viewed as both a logical adaptation to an abusive or violent environment and a potent risk factor for behavior problems in later childhood, adolescence, and adult life.

Early exposure to intense or persistent fear-triggering events affects children's ability to learn. There is extensive and growing scientific evidence that prolonged and/or excessive exposure to fear and states of anxiety can cause levels of stress that can impair early learning and adversely affect later performance in school, the workplace, and the community. Multiple studies in humans have documented problems in cognitive control and learning as a result of toxic stress (National Scientific Council on the Developing Child, 2005; Shonkoff et al., 2009). These findings have been strengthened by research evidence from nonhuman primates and rodents that is expanding our understanding of the brain mechanisms underlying these difficulties.

The brain region in animals that appears highly vulnerable to adversity in this regard is the prefrontal cortex, which is the critical area for regulating thought, emotions, and actions as well as for keeping information readily accessible during the process of active learning. For example, researchers have found that elevations of brain chemicals such as noradrenaline, an important neurotransmitter, can impair functions that are controlled by the prefrontal region by altering the activity of neurons in that area of the brain. In a related fashion, humans experiencing chronic stress have been shown to perform poorly on tasks related to prefrontal cortex functioning (such as working memory or shifting attention) and their ability to control their emotions is typically impaired (Arnsten, 2009).

Implications for Policy and Practice

Many policy makers, educators, and even medical professionals are unaware of the potentially significant, long-term risks to children of exposure to fear-provoking circumstances—including family violence—and lack information about the prevalence of these situations in their communities. This can lead to widespread misconceptions of how children experience and respond to fear.

The scientific knowledge around fear and anxiety points to three important implications:

1. Young children can perceive threat in their environment, but unlike adults, they do not have the cognitive or physical capacities to regulate their psychological response, reduce the threat, or remove themselves from the threatening situation. As a result, serious fear-triggering events such as family violence can have significant and long-lasting impacts on the developing child, beginning in infancy.

2. Children do not naturally outgrow early learned fear responses over time. If young children are exposed to persistent fear and excessive threat during particularly sensitive periods in the developmental process, they may not develop healthy patterns of threat or stress regulation. When they occur, these disruptions do not naturally disappear.
3. Simply removing a child from a dangerous environment will not by itself undo the serious consequences or reverse the negative impacts of early fear learning. Children who have been traumatized need to be in responsive and secure environments that restore their sense of safety, control, and predictability—and supportive interventions are needed to ensure the provision of these environments.

As a result, it is important for policies and programs to take into account children's developmental needs, beginning in early infancy, particularly focusing more attention on preventing persistent fear and anxiety.

Children who live in violent homes or communities have been shown to have more behavior problems, greater evidence of PTSD, and increased physical symptoms such as headaches and stomach aches, as well as lower capacity for empathy and diminished self-esteem (Huth-Bocks et al., 2001). Programs focused on the reduction of domestic violence, substance abuse, neighborhood violence, and poverty are examples of the kinds of community-based services whose impacts could be enhanced by incorporating targeted interventions to explicitly address the emotional needs of young children living under these conditions. When delivered effectively, such interventions could have a multiplier effect into the next generation by reducing both the individual and the societal costs of the negative developmental effects of persistent fear, including mental health impairment, antisocial behavior, physical disease, and violent crime.

REFERENCES

- Acierno, R., M. A. Hernandez, A. B. Amstadter, H. S. Resnick, K. Steve, W. Muzzy, and D. G. Kilpatrick. 2010. Prevalence and correlates of emotional, physical, sexual, and financial abuse and potential neglect in the United States: The national elder mistreatment study. *American Journal of Public Health* 100(2):292-297.
- Administration on Aging. 2011. *Aging statistics*. http://www.aoa.gov/aoaroot/aging_statistics/index.aspx (accessed July 1, 2011).
- Arnsten, A. F. T. 2009. Stress signalling pathways that impair prefrontal cortex structure and function. *Nature Reviews Neuroscience* 10(6):410-422.
- Australian Institute of Criminology. 2003. *Australian crime: Facts and figures*. Canberra: The Australian Government.
- Bandura, A. 1977. *Social learning theory*. Englewood Cliffs, NJ: Prentice Hall.
- Bargh, J. A., and T. L. Chartrand. 1999. The unbearable automaticity of being. *American Psychologist* 54(7):462-479.

- Beach, S. R., R. Schulz, N. G. Castle, and J. Rosen. 2010. Financial exploitation and psychological mistreatment among older adults: Differences between African Americans and non-African Americans in a population-based survey. *Gerontologist* 50(6): 744-757.
- Berkowitz, L. 1993. *Aggression: Its causes, consequences, and control*. McGraw-Hill Series in Social Psychology. New York: McGraw-Hill.
- Biddle, E., and D. Hartley. 2002. The cost of workplace homicides in the 1990-1997. In *Injury prevention and control. U.S. Sixth world conference*. Pp. 421-422.
- Blenkner, M., M. Bloom, and M. Nielsen. 1971. Research and demonstration project of protective services. *Social Casework* 52(8):483-499.
- Bookin, D., and R. E. Dunkle. 1985. Elder abuse—Issues for the practitioner. *Social Casework—Journal of Contemporary Social Work* 66(1):3-12.
- Brand, S., and R. Price. 2000. *The economic and social costs of crime, Home Office Research Study 217*. London: Home Office.
- Breckman, R. S., and R. D. Adelman 1988. *Strategies for helping victims of elder mistreatment*. Sage Human Services Guides. Newbury Park, CA: Sage Publications.
- Brinks, V., E. R. de Kloet, and M. S. Oitzl. 2008. Strain specific fear behaviour and glucocorticoid response to aversive events: Modelling PTSD in mice. *Progress in Brain Research* 167:257-261.
- Bronfenbrenner, U. 1979. *The ecology of human development: Experiments by nature and design*. Cambridge, MA: Harvard University Press.
- Burston, G. R. 1975. Granny-battering. *British Medical Journal* 3(5983):592.
- Buvinic, M., and A. R. Morrison. 1999. *Violence as an obstacle to development*. IDB technical note 4. Washington, DC: Inter-American Development Bank (IDB).
- Buvinic, M., A. R. Morrison, and M. Shifter. 1999. Violence in Latin America and the Caribbean: A framework for action. In *Too close to home: Domestic violence in the Americas*, edited by A. Morrison and B. Orlando. New York: Inter-American Development Bank. Pp. 3-34.
- Cantor, M. H. 1991. Family and community—Changing roles in an aging society. *Gerontologist* 31(3):337-346.
- Carew, M. B., and J. W. Rudy. 1991. Multiple functions of context during conditioning—A developmental analysis. *Developmental Psychobiology* 24(3):191-209.
- CDC (Centers for Disease Control and Prevention). 2008. Adverse health conditions and health risk behaviors associated with intimate partner violence. *Morbidity and Mortality Weekly Report* 57(05):113-117.
- CDC. 2009. *Understanding child maltreatment*. <http://www.cdc.gov/violenceprevention/pdf/CM-FactSheet-a.pdf> (accessed April 2011).
- CDC. 2011. *Data & statistics (wisqars): Cost of injury reports*. <http://wisqars.cdc.gov:8080/cost/> (accessed 2011).
- Childs, H. W., B. Hayslip, L. M. Radika, and J. A. Reinberg. 2000. Young and middle-aged adults' perceptions of elder abuse. *Gerontologist* 40(1):75-85.
- Cialdini, R. B. 2001. *Influence: Science and practice*. 4th ed. Boston, MA: Allyn and Bacon.
- Clancy, T. V., L. N. Misick, and D. Covington. 1994. The financial impact of intentional violence on community hospitals. *Journal of Trauma-Injury Infection and Critical Care* 37(5):704.
- Cohen, M. A. 1988. Pain, suffering, and jury awards—A study of the cost of crime to victims. *Law & Society Review* 22(3):537-555.
- Cohen, M. A. 1998. The monetary value of saving a high-risk youth. *Journal of Quantitative Criminology* 14(1):5-33.
- Coker, A. L., C. E. Reeder, M. K. Fadden, and P. H. Smith. 2004. Physical partner violence and Medicaid utilization and expenditures. *Public Health Reports* 119(6):557-567.

- Cook, P. J., B. A. Lawrence, J. Ludwig, and T. R. Miller. 1999. The medical costs of gunshot injuries in the United States. *Journal of the American Medical Association* 282(5):447-454.
- Courtney, M. E. 1999. The economics. *Child Abuse & Neglect* 23(10):975-986.
- Coyne, A. C., W. E. Reichman, and L. J. Berbig. 1993. The relationship between dementia and elder abuse. *American Journal of Psychiatry* 150(4):643-646.
- Davis, M. 2006. Neural systems involved in fear and anxiety measured with fear-potentiated startle. *American Psychologist* 61(8):741-756.
- Day, T. 1995. *The health-related costs of violence against women in Canada: The tip of the iceberg*. Centre for Research on Violence Against Women and Children Publication Series. London, Ont.: The University of Western Ontario.
- de Kloet, E. R., H. Karst, and M. Joels. 2008. Corticosteroid hormones in the central stress response: Quick-and-slow. *Frontiers in Neuroendocrinology* 29(2):268-272.
- Delgado, M. R., A. Olsson, and E. A. Phelps. 2006. Extending animal models of fear conditioning to humans. *Biological Psychology* 73(1):39-48.
- Dodge, K. A. 1986. A social information-processing model of social competence in children. *Minnesota Symposia on Child Psychology* 18:77-125.
- Dodge, K. A., J. M. Price, J. A. Bachorowski, and J. P. Newman. 1990. Hostile attributional biases in severely aggressive adolescents. *Journal of Abnormal Psychology* 99(4): 385-392.
- Dollard, J., L. W. Doob, N. E. Miller, O. H. Mowrer, and R. R. Sears. 1939. *Frustration and aggression*. New Haven, CT: Yale University Press.
- Dong, X. 2005. Medical implications of elder abuse and neglect. *Clinics in Geriatric Medicine* 21(2):293.
- Dong, X. 2011. Prospective study of the elder self-neglect and emergency department use in a community population. *Journal of the American Geriatrics Society* 59:S190-S191.
- Dong, X., and M. A. Simon. 2008. Is greater social support a protective factor against elder mistreatment? *Gerontology* 54(6):381-388.
- Dong, X., and M. A. Simon. 2010. Gender variations in the levels of social support and risk of elder mistreatment in a Chinese community population. *Journal of Applied Gerontology* 29(6):720-739.
- Dong, X., M. A. Simon, R. Odwazny, and M. Gorbien. 2008. Depression and elder abuse and neglect among a community-dwelling Chinese elderly population. *Journal of Elder Abuse & Neglect* 20(1):25-41.
- Dong, X., T. Beck, and M. A. Simon. 2009a. Loneliness and mistreatment of older Chinese women: Does social support matter? *Journal of Women & Aging* 21(4):293-302.
- Dong, X., M. Simon, C. M. de Leon, T. Fulmer, T. Beck, L. Hebert, C. Dyer, G. Paveza, and D. Evans. 2009b. Elder self-neglect and abuse and mortality risk in a community-dwelling population. *Journal of the American Medical Association* 302(5):517-526.
- Dong, X., M. Simon, C. Mendes de Leon, T. Fulmer, T. Beck, L. Hebert, C. Dyer, G. Paveza, and D. Evans. 2009c. Elder self-neglect and abuse and mortality risk in a community-dwelling population. *Journal of the American Medical Association* 302(5): 517-526.
- Dong, X., M. A. Simon, T. T. Beck, C. Farran, J. J. McCann, C. F. Mendes de Leon, E. Lau-mann, and D. A. Evans. 2010. Elder abuse and mortality: The role of psychological and social wellbeing. *Gerontology*.
- Dong, X., E. S. Chang, E. Wong, B. Wong, and M. A. Simon. 2011a. How do U.S. Chinese older adults view elder mistreatment? Findings from a community-based participatory research study. *Journal of Aging and Health* 23(2):289-312.

- Dong, X., M. A. Simon, T. Fulmer, C. F. M. de Leon, L. E. Hebert, T. Beck, P. A. Scherr, and D. A. Evans. 2011b. A prospective population-based study of differences in elder self-neglect and mortality between black and white older adults. *Journals of Gerontology Series A-Biological Sciences and Medical Sciences* 66(6):695-704.
- Dong, X., E. S. Chang, E. Wong, B. Wong, and M. A. Simon. In press. Association of depressive symptomatology and elder mistreatment in a U.S. Chinese population: Findings from a community-based participatory research study. *Journal of Aggression, Maltreatment, and Trauma*.
- Dyer, C. B., V. N. Pavlik, K. P. Murphy, and D. J. Hyman. 2000. The high prevalence of depression and dementia in elder abuse or neglect. *Journal of the American Geriatrics Society* 48(2):205-208.
- El-Zanaty, F. H. 1996. *Egypt demographic and health survey, 1995*. Cairo, Egypt; National Population Council, Calverton, MD; Macro International.
- Evasovich, M., R. Klein, F. Muakkassa, and R. Weekley. 1998. The economic effect of child abuse in the burn unit. *International Journal of Burns* 24(7):642-645.
- Fanslow, J., C. Coggan, B. Miller, and R. Norton. 1997. The economic cost of homicide in New Zealand. *Social Science & Medicine* 45(7):973-977.
- Farrington, D. P. 1997. The relationship between low resting heart rate and violence. In *Bio-social bases of violence*. Vol. 292, edited by A. Raine, P. Brennan, D. P. Farrington, and S. A. Mednick. New York: Plenum Press. Pp. 89-106.
- Faulkner, L. R. 1982. Mandating the reporting of suspected cases of elder abuse—An inappropriate, ineffective and ageist response to the abuse of older adults. *Family Law Quarterly* 16(1):69-91.
- Finkelhor, D., R. Ormrod, H. Turner, and S. L. Hamby. 2005. The victimization of children and youth: A comprehensive, national survey. *Child Maltreatment* 10(1):5-25.
- Fisher, A., L. G. Chestnut, and D. M. Violette. 1989. The value of reducing risks of death: A note on new evidence. *Journal of Policy Analysis and Management* 8(1):88-100.
- Forjuoh, S. N. 2000. Child maltreatment related injuries: Incidence, hospital charges, and correlates of hospitalization. *Child Abuse & Neglect* 24(8):1019-1025.
- Fulmer, T., A. Firpo, L. Guadagno, T. M. Easter, F. Kahan, and B. Paris. 2003. Themes from a grounded theory analysis of elder neglect assessment by experts. *Gerontologist* 43(5):745-752.
- GAO (Government Accountability Office). 2011. *Elder justice: Stronger federal leadership could enhance national response to elder abuse*. <http://aging.senate.gov/events/hr230kb2.pdf> (accessed July 1, 2011).
- Gold, M. R., J. E. Siegel, L. B. Russell, and M. C. Weinstein. 1996. *Cost-effectiveness in health and medicine*. New York: Oxford.
- Grillon, C. 2002. Startle reactivity and anxiety disorders: Aversive conditioning, context, and neurobiology. *Biological Psychiatry* 52(10):958-975.
- Grillon, C., and C. A. Morgan. 1999. Fear-potentiated startle conditioning to explicit and contextual cues in Gulf War veterans with posttraumatic stress disorder. *Journal of Abnormal Psychology* 108(1):134-142.
- Grillon, C., L. Dierker, and K. R. Merikangas. 1998. Fear-potentiated startle in adolescent offspring of parents with anxiety disorders. *Biological Psychiatry* 44(10):990-997.
- Guerra, N. G., L. R. Huesmann, and A. Spindler. 2003. Community violence exposure, social cognition, and aggression among urban elementary school children. *Child Development* 74(5):1561-1576.
- Gunderson, L. 1999. The financial costs of gun violence. *Annals of Internal Medicine* 131(6):483-484.
- Hashemi, L., and B. S. Webster. 1998. Non-fatal workplace violence workers' compensation claims (1993-1996). *Journal of Occupational and Environmental Medicine* 40(6):561-567.

- Heise, L., M. Ellsberg, and M. Gottemoeller. 1999. *Ending violence against women*. Baltimore, MD: Johns Hopkins University School of Public Health, Center for Communications Programs.
- HHS (U.S. Department of Health and Human Services). 2001. *Prevention pays: The costs of not preventing child abuse and neglect*. Fairfax, VA: Caliber Associates (no longer available).
- Hoel, H., K. Sparks, and C. Cooper. 2001. *The cost of violence/stress at work and the benefits of a violence/stress-free working environment*. University of Manchester Institute of Science and Technology. Report commissioned by the International Labor Organization.
- Homer, A. C., and C. Gilleard. 1990. Abuse of elderly people by their carers. *British Medical Journal* 301(6765):1359-1362.
- Hornick, J., J. Paetsch, and L. Bertrand. 2002. *A manual on conducting economic analysis of crime prevention programs*. Ottawa, Canada: National Crime Prevention Centre.
- Huesmann, L. R. 1988. An information-processing model for the development of aggression. *Aggressive Behavior* 14(1):13-24.
- Huesmann, L. R. 1998. The role of social information processing and cognitive schemas in the acquisition and maintenance of habitual aggressive behavior. In *Human aggression: Theories, research, and implications for social policy*, edited by R. G. Geen and E. I. Donnerstein. New York: Academic Press. Pp. 73-109.
- Huesmann, L., and N. Guerra. 1997. Children's normative beliefs about aggression and aggressive behavior. *Journal of Personality and Social Psychology* 72(2):408-419.
- Huth-Bocks, A. C., A. A. Levendosky, and M. A. Semel. 2001. The direct and indirect effects of domestic violence on young children's intellectual functioning. *Journal of Family Violence* 16(3):269-290.
- Irazuzta, J. E., J. E. McJunkin, K. Danadian, F. Arnold, and J. L. Zhang. 1997. Outcome and cost of child abuse. *Child Abuse & Neglect* 21(8):751-757.
- Jones, J. S. 1994. Elder abuse and neglect—Responding to a national problem. *Annals of Emergency Medicine* 23(4):845-848.
- Jones, J. S., C. Holstege, and H. Holstege. 1997. Elder abuse and neglect: Understanding the causes and potential risk factors. *American Journal of Emergency Medicine* 15(6):579-583.
- Kim, J. H., and R. Richardson. 2008. The effect of temporary amygdala inactivation on extinction and reextinction of fear in the developing rat: Unlearning as a potential mechanism for extinction early in development. *Journal of Neuroscience* 28(6):1282-1290.
- Kim, J. J., and M. S. Fanselow. 1992. Modality-specific retrograde-amnesia of fear. *Science* 256(5057):675-677.
- Kleinschmidt, K. C. 1997. Elder abuse: A review. *Annals of Emergency Medicine* 30(4):463-472.
- Krug, E., L. Dahlberg, J. Mercy, A. Zwi, and R. Lozano. 2002. *World report on violence and health*. Geneva: World Health Organization.
- Lachs, M. S., C. S. Williams, S. O'Brien, L. Hurst, A. Kossack, A. Siegal, and M. E. Tinetti. 1997. ED use by older victims of family violence. *Annals of Emergency Medicine* 30(4):448-454.
- Lachs, M. S., C. S. Williams, S. O'Brien, K. A. Pillemer, and M. E. Charlson. 1998. The mortality of elder mistreatment. *Journal of the American Medical Association* 280(5):428-432.
- Lachs, M. S., C. S. Williams, S. O'Brien, and K. A. Pillemer. 2002. Adult protective service use and nursing home placement. *Gerontologist* 42(6):734-739.
- Lau, E., and J. Kosberg. 1979. Abuse of the elderly by informal care providers. *Aging* 299:10-15.
- Leadership Council of Aging Organizations. 2010. *Letter to Chairman Harkin and ranking member Cochran-Chairman Obey and ranking member Tiabrt*. http://www.nasuad.org/documentation/policy_priorities/signed_onto_letters/elderjusticeact.pdf (accessed 2010).

- LeDoux, J. E. 2000. Emotion circuits in the brain. *Annual Review of Neuroscience* 23: 155-184.
- LeDoux, J. E., and E. A. Phelps. 2008. Handbook of emotions. 3rd ed, edited by M. Lewis, J. M. Haviland-Jones, and L. F. Barrett: New York: Guilford Press. Pp. 159-179.
- Lewis, M., and L. Michalson. 1983. *Children's emotions and moods: Developmental theory and measurement*. New York: Plenum Press.
- Libby, A. M., M. R. Sills, M. K. Thurston, and H. D. Orton. 2003. Costs of childhood physical abuse: Comparing inflicted and unintentional traumatic brain injuries. *Pediatrics* 112(1):58-65.
- Longres, J. F. 1994. Self-neglect and social-control—A modest test of an issue. *Journal of Gerontological Social Work* 22(3-4):3-20.
- Ludwig, J., and P. J. Cook. 2000. Homicide and suicide rates associated with implementation of the Brady handgun violence prevention act. *Journal of the American Medical Association* 284(5):585-591.
- Mansingh, A., and P. Ramphal. 1993. The nature of interpersonal violence in Jamaica and its strain on the national-health system. *West Indian Medical Journal* 42(2):53-56.
- Max, W., and D. P. Rice. 1993. Shooting in the dark—Estimating the cost of firearm injuries. *Health Affairs* 12(4):171-185.
- McCall, B. P., and I. B. Horwitz. 2004. Workplace violence in Oregon: An analysis using workers' compensation claims from 1990-1997. *Journal of Occupational and Environmental Medicine* 46(4):357-366.
- McEwen, B. S. 2007. Physiology and neurobiology of stress and adaptation: Central role of the brain. *Physiological Reviews* 87(3):873-904.
- McGaugh, J. L., L. Cahill, and B. Roozendaal. 1996. Involvement of the amygdala in memory storage: Interaction with other brain systems. *Proceedings of the National Academy of Sciences USA* 93(24):13508-13514.
- McIntosh, J. L., and R. W. Hubbard. 1988. Indirect self-destructive behavior among the elderly—A review with case examples. *Journal of Gerontological Social Work* 13(1-2): 37-48.
- Mendonca, R. N., J. Alves, and J. Cabral Filho. 2002. Hospital costs due to violence against children and adolescents in Pernambuco State, Brazil, during 1999. *Cad Saude Publica*.
- Miller, T. R. 1989. *Narrowing the plausible range around the value of life*. Washington, DC: The Urban Institute.
- Miller, T. R., and M. A. Cohen. 1997. Costs of gunshot and cut/stab wounds in the United States, with some Canadian comparisons. *Accident Analysis and Prevention* 29(3):329-341.
- Miller, T. R., M. A. Cohen, and S. B. Rossman. 1993. Victim costs of violent crime and resulting injuries. *Health Affairs* 12(4):186-197.
- Miller, T. R., M. A. Cohen, and B. Wiersma. 1996. *Victim costs and consequences: A new look*. National Institute of Justice Research Report, U.S. Department of Justice, Office of Justice Programs.
- Miller, T. R., D. A. Fisher, and M. A. Cohen. 2001. Costs of juvenile violence: Policy implications. *Pediatrics* 107(1):art. no.-e3.
- Mock, C., S. Pilcher, and R. Maier. 1994. Comparison of the costs of acute treatment for gunshot and stab wounds—Further evidence of the need for firearms control. *Journal of Trauma-Injury Infection and Critical Care* 36(4):516-522.
- Moon, A., and O. Williams. 1993. Perceptions of elder abuse and help-seeking patterns among African-American, caucasian American, and Korean-American elderly women. *Gerontologist* 33(3):386-395.
- Morrison, A., and M. Orlando. 1999. Social and economic costs of domestic violence: Chile and Nicaragua. In *Too close to home: Domestic violence in the Americas*, edited by A. Morrison and M. Biehl. New York: Inter-American Development Bank.

- Mouton, C. P., and D. V. Espino. 1999. Health screening in older women. *American Family Physician* 59(7):1835-1842.
- Mouton, C. P., R. J. Rodabough, S. L. D. Rovi, J. L. Hunt, M. A. Talamantes, R. G. Brzyski, and S. K. Burge. 2004. Prevalence and 3-year incidence of abuse among postmenopausal women. *American Journal of Public Health* 94(4):605-612.
- Nahmiash, D. 2002. Powerlessness and abuse and neglect of older adults. *Journal of Elder Abuse & Neglect* 14(1):21-47.
- National Crime Prevention Council. 1999. *Saving money while stopping crime: A handy reference for prevention advocates*. Topics in Crime Prevention. Washington, DC.
- National Scientific Council on the Developing Child. 2005. Excessive stress disrupts the architecture of the developing brain: Working paper no. 3. http://developingchild.harvard.edu/index.php/resources/reports_and_working_papers/working_papers/wp3/ (accessed April 2011).
- Nelson, C. A., and M. DeHaan. 1996. Neural correlates of infants' visual responsiveness to facial expressions of emotion. *Developmental Psychobiology* 29(7):577-595.
- Nemeroff, C. B. 2004. Neurobiological consequences of childhood trauma. *Journal of Clinical Psychiatry* 65(1):18-28.
- Neville, P., A. Boyle, and S. Baillon. 1999. A descriptive survey of acute bed usage for dementia care in old age psychiatry. *International Journal of Geriatric Psychiatry* 14(5):348-354.
- New, M., and L. Berliner. 2000. Mental health service utilization by victims of crime. *Journal of Traumatic Stress* 13(4):693-707.
- NRC (National Research Council). 2003. *Elder mistreatment: Abuse, neglect, and exploitation in an aging America*. Panel to Review Risk and Prevalence of Elder Abuse and Neglect. Edited by R. J. Bonnie and R. B. Wallace. Washington, DC: The National Academies Press.
- Payne, J. E., T. V. Berne, R. L. Kaufman, and R. Dubrowskij. 1993. Outcome of treatment of 686 gunshot wounds of the trunk at Los-Angeles-County-USC-Medical-Center—Implications for the community. *Journal of Trauma-Injury Infection and Critical Care* 34(2):276-281.
- Peden, M., and J. Van der Spuy. 1998. The cost of treating firearm victims. *Trauma Review* 6:4-5.
- Phelps, E. A., and J. E. LeDoux. 2005. Contributions of the amygdala to emotion processing: From animal models to human behavior. *Neuron* 48(2):175-187.
- Phelps, E. A., M. R. Delgado, K. I. Nearing, and J. E. LeDoux. 2004. Extinction learning in humans: Role of the amygdala and vmPFC. *Neuron* 43(6):897-905.
- Phillips, R. 1998. The economic cost of homicide to a South African city. University of Cape Town Graduate School of Business, Cape Town.
- Pine, D. S. 1999. Pathophysiology of childhood anxiety disorders. *Biological Psychiatry* 46(11):1555-1566.
- Plotnick, R. D., and L. Deppman. 1999. Using benefit-cost analysis to assess child abuse prevention and intervention programs. *Child Welfare* 78(3):381-407.
- Podnieks, E. 1992. National survey on abuse of the elderly in Canada. *Journal of Elder Abuse & Neglect* 4:5-58.
- Pollak, S. D. 2008. Mechanisms linking early experience and the emergence of emotions: Illustrations from the study of maltreated children. *Current Directions in Psychological Science* 17(6):370-375.
- Pollak, S. D., and D. J. Kistler. 2002. Early experience is associated with the development of categorical representations for facial expressions of emotion. *Proceedings of the National Academy of Sciences USA* 99(13):9072-9076.
- Pollak, S. D., D. Cicchetti, K. Hornung, and A. Reed. 2000. Recognizing emotion in faces: Developmental effects of child abuse and neglect. *Developmental Psychology* 36(5): 679-688.

- Quirk, G. J., R. Garcia, and F. Gonzalez-Lima. 2006. Prefrontal mechanisms in extinction of conditioned fear. *Biological Psychiatry* 60(4):337-343.
- Reeb-Sutherland, B. C., S. M. Helfinstein, K. A. Degnan, K. Perez-Edgar, H. A. Henderson, S. Lissek, A. Chronis-Tuscano, C. Grillon, D. S. Pine, and N. A. Fox. 2009. Startle response in behaviorally inhibited adolescents with a lifetime occurrence of anxiety disorders. *Journal of the American Academy of Child and Adolescent Psychiatry* 48(6):610-617.
- Roozendaal, B., B. S. McEwen, and S. Chattarji. 2009. Stress, memory and the amygdala. *Nature Reviews Neuroscience* 10(6):423-433.
- Rovi, S., P. H. Chen, and M. S. Johnson. 2004. The economic burden of hospitalizations associated with child abuse and neglect. *American Journal of Public Health* 94(4):586-590.
- Sameroff, A. 2010. A unified theory of development: A dialectic integration of nature and nurture. *Child Development* 81(1):6-22.
- Sanchez, M. M., C. O. Ladd, and P. M. Plotsky. 2001. Early adverse experience as a developmental risk factor for later psychopathology: Evidence from rodent and primate models. *Development and Psychopathology* 13(3):419-449.
- Seligman, M. E. P. 1975. *Helplessness: On depression, development, and death*. San Francisco, CA: W.H. Freeman.
- Shields, L. B. E., D. M. Hunsaker, and J. C. Hunsaker. 2004. Abuse and neglect: A ten-year review of mortality and morbidity in our elders in a large metropolitan area. *Journal of Forensic Sciences* 49(1):122-127.
- Shonkoff, J. P., W. T. Boyce, and B. S. McEwen. 2009. Neuroscience, molecular biology, and the childhood roots of health disparities. *Journal of the American Medical Association* 301(21):2252-2259.
- Snively, S. 1994. *The New Zealand economic cost of family violence*. Wellington, New Zealand: Family Violence Unit, Department of Social Welfare.
- Song, D. H., G. P. Naude, D. A. Gilmore, and F. Bongard. 1996. Gang warfare: The medical repercussions. *Journal of Trauma-Injury Infection and Critical Care* 40(5):810-815.
- Stanko, E. A., C. Hale, and H. Lucraft. 1998. *Counting the costs: Estimating the impact of domestic violence in the London borough of Hackney*. Crime Concern, funded by Hackney Safer Cities and the Children's Society with the co-operation of the London Borough of Hackney.
- Steinmetz, S. K. 1990. Elder abuse by adult offspring: The relationship of actual vs. perceived dependency. *Journal of Health and Human Resources Administration* 12(4):434-463.
- Sullivan, R. M., M. Landers, B. Yeaman, and D. A. Wilson. 2000. Neurophysiology—Good memories of bad events in infancy. *Nature* 407(6800):38-39.
- Summers, C. L., and E. M. Molyneux. 1992. Suspected child-abuse—Cost in medical time and finance. *Archives of Disease in Childhood* 67(7):905-910.
- Sumner, B. B., E. R. Mintz, and P. L. Brown. 1987. Injuries caused by personal violence. *Injury-International Journal of the Care of the Injured* 18(4):258-260.
- Teaster, P., T. Dugar, M. Moendiondo, E. Abner, K. Cecil, and J. Otto. 2004. *The 2004 survey of adult protective services: Abuse of adults 60 years of age and older*. www.elderabusecenter.org/pdf/research/apsreport030703.pdf (accessed April 4, 2007).
- Tellez, M. G., R. C. Mackersie, D. Morabito, C. Shagoury, and C. Heye. 1995. Risks, costs, and the expected complication of re-injury. *American Journal of Surgery* 170(6):660-664.
- Tjaden, P., and N. Thoennes. 2000. *Full report of the prevalence, incidence, and consequences of violence against women: Findings from the National Violence Against Women Survey*. Washington, DC: National Institute of Justice, Office of Justice Programs.
- U.S. Department of Justice, Bureau of Justice Statistics. 1994. *The costs of crime to victims: Crime data brief*.
- Vassar, M. J., and K. W. Kizer. 1996. Hospitalizations for firearm-related injuries—A population-based study of 9562 patients. *Journal of the American Medical Association* 275(22):1734-1739.

- Walker, J. R. 1997. *Estimates of the costs of crime in Australia 1996*. Trends & Issues in Crime and Criminal Justice, No. 72. Canberra, Australian Capital Territory: Australian Institute of Criminology.
- WHO (World Health Organization). 2002. *World report on violence and health*. Geneva, Switzerland.
- Wismer Fries, A. B., T. E. Ziegler, J. R. Kurian, S. Jacoris, and S. D. Pollak. 2005. Early experience in humans is associated with changes in neuropeptides critical for regulating social behavior. *Proceedings of the National Academy of Sciences USA* 102(47):17237-17240.
- Wisner, C. L., T. P. Gilmer, L. E. Saltzman, and T. M. Zink. 1999. Intimate partner violence against women—Do victims cost health plans more? *Journal of Family Practice* 48(6):439-443.
- World Bank. 2004. *World development report: Making services work for poor people*. Washington, DC: The World Bank.
- Yang, Y. L., P. K. Chao, L. S. Ro, Y. Y. P. Wo, and K. T. Lu. 2007. Glutamate NMDA receptors within the amygdala participate in the modulatory effect of glucocorticoids on extinction of conditioned fear in rats. *Neuropsychopharmacology* 32(5):1042-1051.
- Yodanis, C. L., A. Godenzi, and E. A. Stanko. 2000. The benefits of studying costs: A review and agenda for studies on the economic costs of violence against women. *Policy Studies* 21(3):263-276.