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The Traumatology of Life

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As Ground Zero was still smoldering and the frantic search for survivors continued, Charles Figley and Joseph Boscarino met nearby at 100 Avenue of the Americas in New York City to discuss studying the impact of the terrorist attacks which had occurred just days ago. The authors were no strangers to studying trauma survivors. Figley and Boscarino had collaborated since 1981 on efforts to understand PTSD and the consequences of combat on those who fought in the Vietnam War.

Boscarino had just started his new job two weeks earlier at the New York Academy of Medicine (NYAM) on Fifth Avenue and 103rd Street in Manhattan. On September 11 his PATH train from Hoboken, New Jersey, was one of the last to enter into the basement of the World Trade Center. He remembers going up the escalators from the basement to the main mezzanine level, which was extremely crowded that morning. He recalls heading to the subway tunnels at the end of the mezzanine and walking into the entrance to the C train, north-bound to 96th Street. At 8:46 AM and about 50 meters inside the C train tunnel, he heard a very loud metallic noise and felt a deep tremor on the subway platform.

Boscarino suspected a train derailment on one of the tracks. Thoughts of the 1993 World Trade Center attack ran through his mind as he boarded his uptown train. About 15 minutes or so later when he emerged from the subway tunnel at 96th Street and Central Park West, he entered a different world.

The word on 96th Street was that a plane had flown into one of the Twin Towers. A plane, he thought? About 10 minutes later as he entered the elevator at work, Jose, the operator, announced excitedly that a second plane had flown into the Twin Towers. Boscarino knew exactly what that meant and went to his office. After a few minutes of thought, he knew what to do. He needed to find his way out of Manhattan that morning and to call Charles Figley.

Charles Figley learned of the terrorist attacks on 9/11 after he and his wife, Kathy, attended their daughter Laura's parent-teacher meeting at SAIL High School in Tallahassee, Florida.

At the moment Boscarino was making his way to NYAM, Charles and Kathy were watching the attack on New York and Washington, DC in a state of shock and witnessed the first tower collapsing. They also knew immediately that their organization, Green Cross had better prepare for deployment of its members. Charles Figley was the founder and Kathy was the current director of Green Cross, a humanitarian organization that emerged as a response to the Oklahoma City bombing in 1995. Green Cross was mobilized immediately; the request for their services came at noon, Thursday, September 13th, within 48 hours of the attack¹.

The Figleys flew from Tallahassee, Florida to New York City, through special “mercy flight” permission, because of the Green Cross mission to provide emergency mental health assistance to New Yorkers. It was beautiful flying weather on September 16th, just days after the terrorist attacks that caused so many deaths and pain in the heart of America. Green Cross traumatologists arrived in New York City on September 16, and were housed in the NY Sheraton, a crowded floor occupied primarily by NYU undergraduate students displaced from their dorms that were blocks from Ground Zero.

On Monday, September 17, 2001 the Green Cross began to assist the Services Employees International Union, Local 32BJ, staff and their blue-collar union members. Approximately 1,700 of their 9,000 members were working in and around the Twin Towers at the time (Figley & Figley, 2001).

Green Cross members, including those from Oklahoma City, were available to provide cutting edge services and positive and supportive words of consolation and hope. The training and certification of Green Cross (Figley, 2003) members were due, in part, to the publications like the Journal of Nervous and Mental Disease (JNMD) as well as Traumatology, the official journal of Green Cross. By 2001 the Green Cross and its members had learned much about how to effectively assess and treat those exposed to traumatic stressors and how best to prevent and manage those stressors, across many cultural and demographic contexts.

Purpose

The purpose here is to acknowledge the invaluable contributions about trauma provided to both trauma practitioners and researchers by such publications as JNMD. This article is a continuation of our recent paper (Boscarino & Figley, in press). We hope that these observations will help current and future scholars look beyond the data to the heart of the matter involving real people struggling with real trauma issues. The psychosocial and mental health knowledge acquired from the research stimulated by the September 11th terrorist attacks on New York and Washington, DC is extraordinary. But this work was built upon the knowledge available at the time of the attacks. Below we highlight some of this knowledge that includes the contributing role of this Journal.

The Emerging Interdisciplinary Field of Traumatology

More than anytime in its history traumatology is experiencing unparalleled interest by social scientists, practitioners, mental health policy makers, and the general public. This heightened interest provides a critical opportunity for trauma specialists to be part of the process of co-constructing the future of trauma research and practice.

¹Kathy was very familiar with major disasters and the need for Green Cross assistance. She served for many years with FEMA, the emergency management agency responsible for the Federal response to domestic disasters, and the State of Florida Disaster Operations.

Traumatology is the investigation and application of knowledge about the immediate and long-term consequences of highly stressful events and the factors that affect those consequences. This field emerged over the last twenty years, yet its origin can be traced to the earliest medical writings that discussed the symptoms and treatment of hysteria (Veith, 1965). Indeed, theories and explanations of traumatic stress symptoms are found throughout history. Ellenberger (1970), for example, noted that symptoms such as flashbacks, dissociation, and startle responses were variously viewed as acts of God, the gods, the devil, and various types of spirits. Scientific concepts began to replace religious ones during the latter portion of the 19th century with the invention of hypnotism, and the analysis of psychological possession and multiple personality (Azam, 1887; Flournoy, 1900; Hodgson, 1891). One of the most important innovations, though, was the work done at the La Salpetriere Hospital in Paris. There, Jean-Martin Charcot was the first to demonstrate that hysteria had psychological origins (Trimble, 1981).

Throughout the 19th and 20th centuries, the study of trauma was incorporated within the established fields of mental health: psychiatry (e.g., Kardiner, 1941) and psychology (Grinker & Spiegel, 1946). This largely restrained the development of the emerging field. Investigators and innovative practitioners had to justify their work using the prevailing and limiting paradigms of their respective fields (Figley, 1978a). This began to change in the 1970s, in large part due to the American war in Vietnam and the war veterans who sought relief from their psychosocial and emotional scars.²

The Trauma Journey of Charles Figley

Figley's career as a traumatologist began as a war stress researcher, but his concern about the traumatized began as a war protester (1980d). As a teenage boy from the Heartland, the U.S. Marine Corps seemed to offer Figley an opportunity to establish his independence and to accelerate his progression towards adulthood. However, Figley soon discovered that the realities of combat in Vietnam offered only opportunities to survive until his military tour of duty was over. Years later Figley found myself camped out in the grassy Mall in the shadows of the U.S. Capital in Washington, D.C., surrounded by others who served in combat. Though they wore combat fatigues, their mission was to protest the ongoing war. It was April 1971 and the protesters were part of the Vietnam Veterans against the War. It was the largest protest against a war by those who fought it. Figley had driven down from Penn State University, where he was seeking his master of science degree in human development. On the final day of the protest, Figley and the others lined up and threw back the medals they had earned as veterans onto the steps of the Capital as a token of our opposition to the war in which they fought. It was a very emotional and memorable event.

Frustrated with the role of protester, Figley adopted a different approach. He chose to document what he observed among his fellow combat veterans. Figley started applying the principles of social action research suggested by Kurt Lewin (1946) at the end of WW II by demonstrating that the toll of war went far beyond the battlefield.

The next year (1972) Figley formed a clinical support group for war veterans who were students at the Bowling Green State University. As a member of the faculty, he provided guidance in both coping with university life and managing the post-war struggles with memories of battle and loss. Returning to Penn State for his Ph.D. program, Figley shifted from direct services and observations to library research. Two years later his bibliography of

²Other reviews provide the basis for these observations. Among the more useful ones are Scott's (1993) historical-sociopolitical analysis; Figley's (1978a) history of war trauma and his (Figley, 1988) article in the inaugural issue of the Journal of Traumatic Stress that asserts that the field of traumatic stress studies qualifies as a field of study; and Bloom's (2000) discussion of the birth of ISTSS.

war-related posttraumatic stress disorder (PTSD) was published in the *Congressional Record*.

Figley received an extraordinary number of requests for reprints and general inquiries about sharing resources after publication in the *Congressional Record* (Figley, 1975a). Due to this response, Figley established and served as coordinator of the Consortium on Veterans Studies in 1975; an association that included scores of other interested advocates, researchers, and scholars. At that time, the socio-emotional climate of the country was very different than it is today (Figley, 1980b; 1980c; 1980d). Over 7 million men and women were recently released from military service. Yet, the mental health fields barely recognized the plight of war-traumatized veterans. Burgess (1980) identified the same ignorance toward rape victims and victims of domestic violence during this period.

The first book published on what would later be called “Posttraumatic Stress Disorder” was *Stress Disorders among Vietnam Veterans* (Figley, 1978a). The book focused on defining combat-related stress disorders; identifying the theoretical and clinical importance of the disorder to mental health professionals; explicating the long-term consequences of combat-related trauma; addressing the causes and consequences of the paucity of research in this area; providing clinical guidelines for working with the traumatized; and expanding the knowledge base of combat-related stress disorders, including psychosocial adjustments.

Though seminal, the book was only a stepping-stone toward the evolution of the field. It represented an important facet of this early phase in the development of the field of traumatology: social movements and social policy. The anti-war movement, the movement toward greater human rights for the Vietnam veteran, and the movements championing the rights of other neglected groups led to the concerted and frequently effective efforts to change social policy.

Stress Disorders among Vietnam Veterans (Figley, 1978a), was a byproduct of antiwar sentiment and was partly responsible for the U.S. Congress establishing the Vietnam Veterans Readjustment Counseling program, through Senate Bill 7 in 1979. The next year, the American Psychiatric Association published its third edition of the Diagnostic and Statistical Manual of Mental Disorders (APA, 1980) that included, for the first time, PTSD. Shortly after that, the Veterans Administration established criteria for a service connected, psychiatric disability rating for PTSD. The first “Vet Center” (VA-sponsored outpatient mental health centers) opened in 1979 and by 1990, there were nearly 200 around the country (Blank, 1993).

The Figley book (Figley, 1978) was released at a good time. Almost overnight, the Federal government was spending millions of dollars to establish a national network of community centers to treat Vietnam War veterans and train the professionals necessary to work in them. This naturally led to a need for institutions and healthcare systems to address this new demand for trauma treatment and professional training.

The first training conference that focused on PTSD was held in St. Louis in 1979 and was sponsored by the U.S. Veterans Administration. The first non-government training conference was held in 1982 outside Cincinnati, Ohio, and was devoted not just to understanding and treating war-related PTSD but also the trauma from rape, domestic violence, accidents, and disasters.

Consistent with this broader trauma orientation was the emerging thesis about the post-adjustment problems of Vietnam War veterans. The “Post-Vietnam syndrome” thesis, most clearly articulated by Shatan (1975), suggested that combat veterans display the syndrome of symptoms due to unresolved guilt over killing Vietnamese, including innocent civilians, and

their lack of support for their warrior status on the home front. Other trauma victims were thought to have undergone similar processes.

During this period of his career, Figley (1975a; 1975b; 1976a; 1976b; 1976c) spoke to a wide variety of audiences about the plight of the Vietnam veterans and the lack of appreciation, respect, and attention to their special mental health needs. As noted in the earliest publications on Vietnam veterans (Bourne, 1969; 1971; Figley, 1977; 1978a; Figley & Sprenkle, 1978; Leventman, 1978; Lifton, 1978), there was a substantial cost of war that had not been acknowledged. Few recognized then the enormous war-related psychosocial and emotional damages suffered by the war veterans, their families, and their communities.

It became clear to Figley, based on conversations and interviews with Vietnam veterans, that their syndrome had more similarities than differences with the stress syndromes associated with rape victims, Holocaust survivors, and other groups (Figley, 1978a). Figley first made the connection in 1975 when interviewing a disabled combat veteran in the veteran's home in Illinois. The veteran noted that his mother had interfered with his plans to kill himself by disclosing that she had been raped while he was in Vietnam. She recognized that his symptoms of anger, sleep disturbances, flashbacks, and startle responses were connected to his experiences in Vietnam, because of her own rape-related symptoms. This revelation did not become obvious to Figley until a few years later when he was reviewing the research literature for his first book.³

One of the most important influences in the development of the concept of a traumatic stress syndrome common to combat veterans and other groups was Mardi Horowitz's Stress Response Syndromes (1976). It provided the theoretical building blocks for Figley's own emerging theory of the trauma induction-reduction process. Horowitz's book, together with the works of other stress researchers (e.g., Bourne, 1969; Selye, 1956), enabled Figley to make the bridge between war-related traumatic stress and the distress of others who had been frightened by any one of a wide variety of highly stressful events. The more Figley looked the more obvious it became that fear and stress were the overriding concepts to understanding the response of the traumatized victim.

The Trauma Journey of Joseph Boscarino

In 1977 after completion of his PhD in social psychology from NYU, Joseph Boscarino moved his family to New Haven, Connecticut so he could complete a postdoctoral fellowship in Psychiatric Epidemiology at Yale University and the West Haven VA Medical Center. During this period Boscarino's work focused on substance misuse among veterans and, in particular, Vietnam veterans (Boscarino, 1979; 1980; 1981a; 1981b). About this time Boscarino read Figley's "stress disorders" book and began to focus on these disorders among veterans. In 1979 Boscarino left Yale for a research director position with Market Opinion Research (MOR) in Detroit, MI. MOR had just been awarded the first National Institute of Health (NIH) subcontract for the Epidemiologic Catchment Area (ECA) study. The ECA was the first population-based study of mental disorders in the community using the new Diagnostic and Statistical Manual of Mental Disorders, Version III (DSM-III) criteria, as implemented in the Diagnostic Interview Schedule (DIS) (Robins, et al. 1981). Prior to this time, much psychiatric research was based on subjective assessments among limited population samples and by the use of mostly symptom scales typically focused on psychoneuroses, such as the MMPI scale. At about this time, Boscarino reached out to Figley about conducting a national study of Vietnam veterans using the new DIS interview.

³The trauma literature, I would later discover, noted the many connections between war veterans' adjustment problems and those of other groups (e.g., Krystal, 1968; Niederland, 1968).

MOR had the technology and expertise to conduct such a study at the time. This made perfect sense to Boscarino and Figley, given their motivation and expertise.

Boscarino spent several months putting together a national “ECA” research team and writing a NIH grant, the first submitted to that organization to conduct a true national study of Vietnam veterans using the state-of-art DIS instrument. It was the first time Boscarino worked with Figley and soon they became good friends. But, the study was not funded due in part to reviewers who did not appreciate the physical and mental health problems being experienced by this cohort of veterans and because they thought that Boscarino and Figley lacked research experience.

In 1981, following that rejection Boscarino was forced to abandon his research and his Detroit employer and move to Chicago to find work in the healthcare marketing industry. However, just prior to that move, he was called in as a reviewer by NIH to review Bob Laufer’s Vietnam Legacy Study renewal application. At that time, the Legacy Study was considered one of the best studies of Vietnam veterans available (Boscarino, 2007a). Due to significant study measurement and sample issues, the NIH review committee was divided over further funding. Boscarino made the case that, while this study had limitations, it needed to be funded. There was no prospect of better Vietnam veteran studies in the foreseeable future. The NIH review team agreed with Boscarino and the rest is history (Frey-Wouters & Laufer, 1986). After that NIH review, Boscarino moved to the near North side of Chicago to start a research company downtown near Michigan Avenue, Allied Research Associates (ARA).

In 1990 after selling the shares of his Chicago company to the Gallop Organization and returning from a solo trip to Vietnam, he was thinking about getting back into academic research again. Then, just as he was leaving the Chicago Main Library in the Loop, a red book-jacket caught his attention. It was the summary report of the National Vietnam Veterans Readjustment Study (NVVRS) and Figley was listed as a coauthor (Kulka et al., 1990). This resulted in Boscarino looking up his old friend, Figley the next day. While efforts to obtain the NVVRS data for secondary data analyses from Research Triangle Institute (the study contractor) ultimately failed, the Centers for Disease Control was more supportive and sent Boscarino the mainframe computer tapes for the Vietnam Experience Study (VES) in 1991 (Boscarino, 2007a). By 1992 Boscarino had moved to California to study epidemiology at Cal-Berkeley and the University of California at San Francisco (UCSF). In 1995 he had his first VES paper published (Boscarino, 1995). Many more were to follow (Boscarino, 2008a; 2008b; 2007a; 2007b; 2006a; 2006b; 2004; 1997; 1996; Boscarino & Figley, 2009; Boscarino, et al., 2009; Boscarino & Hoffman, 2007; Boscarino & Chang, 1999a; 1999b.).

Boscarino is a behavioral scientist and a medical epidemiologist, so he has a somewhat unique focus. Trained in social psychology at New York University and in epidemiology at Yale University and University of California, Berkeley, his research approach could be characterized as non-traditional, at least as a behavioral scientist trained in the 1970s. This combination explains in part his efforts to understand the biomedical impact of traumatic stress exposures for 30 years (Boscarino, 1979; 1980; 1981a; 1981b). This body of research has, among other things, confirmed the causative relationship between combat stress and stress-related medical problems. He won recently the highest honor given by the trauma field’s learned society (International Society for Traumatic Stress Studies - ISTSS): The Lifetime Achievement Award⁴ once called the “Pioneer Award until 1995.”

While research has confirmed that Vietnam combat veterans had higher rates of postwar adjustment difficulties (Boscarino, 2007a), when Dr. Boscarino examined the health status

of Vietnam veterans in the community by posttraumatic stress disorder (PTSD), he found that PTSD-positive veterans had substantially higher rates of circulatory, nervous system, digestive, musculoskeletal, and respiratory diseases (Boscarino, 1997a). This was one of the first study to demonstrate this association among Vietnam veterans.

Dr. Boscarino also found that PTSD-positive veterans were significantly more likely to have had abnormal electrocardiograph (ECG) results post-service (28% vs. 14%), including a higher prevalence of myocardial (Q-wave) infarctions and atrioventricular conduction defects (Boscarino and Chang 1999a). Since coronary heart disease is considered an “inflammatory” disease, he also examined the immune status of community-based PTSD-positive veterans and found abnormally high white blood counts ($>11,000/\text{mm}^3$) and T-cell counts ($>2,640/\text{mm}^3$) (Boscarino and Chang 1999b).

Based on these findings, Boscarino examined whether PTSD-positive community-based veterans had a history of autoimmune diseases post-service, since there was clinical evidence supporting neuroendocrine and immune alterations in chronic PTSD cases. In particular, given the reduced cortisol levels he found among Vietnam combat veterans (Boscarino, 1996), he reasoned that a down-regulated glucocorticoid system might cause elevations in leukocyte and other immune inflammatory activities (Boscarino and Chang, 1999b). These autoimmune findings were consistent with these observations and recently published in the *Annals of the New York Academy of Sciences* (Boscarino, 2004). Boscarino found that veterans with PTSD, were more likely to have had post-service autoimmune diseases, including rheumatoid arthritis, psoriasis, insulin-dependent diabetes, and hypothyroidism (Boscarino, 2004).

Boscarino also found that veterans with complex PTSD also were more likely to have clinically higher T-cell counts, hyper-reactive immune responses on standardized delayed cutaneous hypersensitivity tests, and significantly lower dehydroepiandrosterone levels, suggesting that major alterations in neuroendocrinologic functions have likely occurred (Boscarino, 2004; Boscarino, 2007a).

Again, to our knowledge, this was one of the first studies to demonstrate these clinical associations, especially as this relates to heart and autoimmune diseases among a community-based sample of Vietnam veterans. He recently replicated his PTSD- rheumatoid arthritis results among veterans in the Vietnam Twin Registry using a co-twin study design, which suggests that this link is likely not due to genetic and/or childhood exposures, per se, but to PTSD onset specifically (Boscarino et al., 2010).

Mechanisms of Traumatic Stress Injuries

Following on the PTSD psychobiology work of Boscarino and others, there has been a call for replacing PTSD with a spectrum diagnosis of traumatic stress injury (Figley & Nash, 2007). Efforts to understand the effects of psychological trauma is to understand how memories are formed and maintained, since psychological trauma is about memory and memory management (Debiec & Ledoux, 2009; Verfaellie & Vasterling, 2009).

⁴Lifetime Achievement Award

This award is the highest honor given by ISTSS. It is awarded to the individual who has made great lifetime contributions to the field of traumatic stress. Winners are among the most celebrated scholars of their time: 2011 Mark Creamer, PhD; 2010 Joseph A. Boscarino, PhD, MPH; 2009 Roger K. Pitman, MD; 2008 Dean Kilpatrick, PhD; 2007 Arie Shalev, MD; 2006 Louis Crocq, MD, PhD; 2005 William Yule, PhD; 2004 Terence M. Keane, PhD; 2003 Frank Ochberg, MD; 2002 Yael Danieli, PhD; 2001 Robert S. Pynoos, MD, MPH; 2000 Robert Ursano, MD; 1999 Matthew Friedman, MD, PhD; 1998 Bessel van der Kolk, MD; 1997 Edna Foa, PhD; 1996 Judith L. Herman, MD; 1995 Lars Weisaeth, MD; 1994 Charles R. Figley PhD; 1993 Ann Burgess, DNSc; 1992 Henry Krystal, MD; 1991 Lawrence C. Kolb; 1990 William Niederland; 1989 Leo Eitinger, MD; 1988 James Titchener, MD; 1987 Beverly Raphael, MD; 1986 Mardi J. Horowitz, MD; 1985 Robert Jay Lifton, MD.

Recently Nash and Figley embarked on an interesting intellectual journey, picking up several colleagues along the way, including Jonathan Shay. The new stress injury paradigm they proposed has the potential of changing the way we quantify behavioral health following traumatic events and determining the treatment required to be more resilient. If correct, the new paradigm will help lead to discoveries that can predict a time-limited opportunity to treat the trauma injury to prevent a more chronic condition, including life-long PTSD, depression, substance abuse disorder, and all of the other co-occurring conditions noted. Rather than simply managing the injury through stress reduction/management programs, this new paradigm predicts the benefits of first “consolidating” the memories (Marshall & Born, 2007; Silvestri & Root, 2008) and then systematically eliminating the harmful emotional impact of these traumatizing memories through established exposure methods that change the emotional valence (from negative to neutral or positive) (cf, Sharma, Nargang, & Dickson, 2012).

Hostage-Related and Terrorism Trauma

In 1979 over 50 Americans were taken hostage in Iran and were held there for 444 days. Figley organized the Task Force on Families of Catastrophe to provide expert advice to the U.S. State Department on the handling of the hostage families. Among other things, the Task Force drew upon the extensive literature on POWs and their families (Figley, McCubbin & Spanier, 1981; Figley & McCubbin, 1983a). In addition, they cited important axioms from investigations of a 1974 robbery in Stockholm, Sweden. The “Stockholm Syndrome” (Strenz, 1982) was the phenomenon of a victim apparently falling in love with her captor (Ochberg, 1996). Extending this terrorism work, Frank Ochberg co-edited one of the first books on terrorism (Ochberg & Soskis, 1982). In addition, in England, a study was published showing that people not seriously harmed in a terrorist bombing were more incapacitated than would have been expected. This post-terrorism phenomenon was termed an “aftermath neurosis” (Sims, White, & Murphy, 1979).

Boscarino and colleagues made substantial and sustained contributions to September 11th studies, which were funded by National Institutes of Health (NIH) grants (Grant # R01-MH-66403 and R21-MH-086317) and other sponsors (Boscarino & Adams, 2009; 2008; Boscarino, et al., 2011a; 2011b; 2006a; 2006b; 2006c; 2006d; 2005; 2004a; 2004b; 2004c; 2003). Boscarino’s World Trade Center Disaster (WTCD) study was a prospective cohort study of 2,368 New York City (NYC) adults funded shortly after the September 11th attacks (Boscarino, et al., 2011b; 2004). The findings reported were based on a baseline survey conducted one year after the disaster and a follow-up conducted two years post-disaster.

One of the goals of this research was to assess the effectiveness of post-disaster treatments received by NYC residents following the attacks. Among the major findings of this study was the relatively small increase in mental health service utilization that occurred in the community post-disaster and that brief interventions shortly after the attack seemed to be highly effective (Boscarino & Adams, 2008, Boscarino, et al., 2011b). Specifically, those who received more conventional, longer-term post-disaster interventions, such as formal psychotherapy sessions and/or psychotropic medications, seemed to have poorer outcomes compared to those who received brief interventions shortly after the attacks (Boscarino, et al., 2011b). Since the Boscarino study was designed to assess treatment outcomes, used advanced measurement techniques, and incorporated matching to control for bias, these treatment findings were unexpected and raised clinical questions related to the effectiveness of treatments. Additional findings of this study were related to the impact of the disaster among minority group members, trauma exposure and alcohol abuse, and the onset and course of PTSD, as well as other findings (Boscarino, et al., 2011a; Boscarino & Adams, 2008; Boscarino & Adams, 2009a; Boscarino, et al., 2005).

Today this research effort continues through the development of the New York PTSD Risk Score (NYPRS), which is being used to predict the onset of PTSD among trauma-exposed populations, including Geisinger Clinic patients (Boscarino et al., 2012a; 2012b; 2012c; 2011c). Altogether, Boscarino's WTCD work has resulted in over 45 scientific publications and represents one of the largest bodies of work in this field. Boscarino and his team are now using this knowledge together with his PTSD genetic work at Geisinger to develop the next generation of PTSD prediction models (Boscarino et al., 2012d; Boscarino & Figley, 2012).

Starting ISTSS and the Journal of Traumatic Stress

Due to the major social movements, shifts in social policy, and changes in psychiatric diagnoses discussed, efforts to bring various constituencies together was a matter of when and how, not if this would happen or not. The ingredients required to form the infrastructure of a field of study, initially called traumatic stress studies, were becoming increasingly available. All that was needed was a plan for integrating the various demands, perceived needs, and interested people. This began with an extension of an existing organization.

Figley recognized that he could use the resources of his Consortium on Veteran Studies to provide the critical, initial support to start the organization. However, he also knew that the constituency for a new field, organization, and scholarly journal must include but not be limited to veteran studies. Indeed, by bringing together a large number of scholars and practitioners who worked with a wide variety of traumatized populations, the unifying theories, concepts, assessment tools, and treatment approaches would likely evolve very quickly.

However, Figley and his colleagues reasoned that it was wise to first establish an organization to support a refereed, scholarly journal. A journal for traumatic stress studies would not only promulgate research findings about trauma but also report on promising assessment and treatment approaches. Based on his knowledge of publishing, he knew that publishers would not be interested unless there was a substantial subscription base that would be provided by an organization.

In 1983, Figley wrote to a large number of colleagues, including the current editor of this Journal (John A. Talbott) to propose the formation of the Society for Traumatic Stress Studies and the *Journal of Traumatic Stress*. The letter read, in part:

"I believe that an organization, tentatively titled the Society for Traumatic Stress Studies, would be a useful contribution. Moreover, that the central purpose of this Society would be to sponsor a scholarly publication, tentatively titled, Trauma and Its Wake: The Journal of the Society for Traumatic Stress Studies. Such a journal would publish important advancements in the field of traumatic and post-traumatic stress. A distinguished Editorial Board is already in place in connection with the book I am editing, with the same primary title... . How appropriate is such a society and journal, in particular, and the emergence of a separate field of traumatic or post-traumatic stress in general?"

(Figley, 1986a)

The response to the author's letter was positive and enthusiastic. He sent another memorandum the following year to the people, he had previously contacted, and finally, after the completion of *Trauma and Its Wake* (Figley, 1985a) and the birth of his daughter, Laura, in February 1985, he contacted the group to join him in Washington, D.C. for breakfast. He knew that those who were attending the annual conference of the National Organization for Victim Assistance would be available. The others lived either in or near

Washington, D.C. At the breakfast meeting on March 2, 1985 the Society for Traumatic Stress Studies (STSS) was formally established. Those who attended comprised most of the Society's Founding Board of Directors⁵

It was agreed that the purpose of the Society would be: *"to advance knowledge about the immediate and long-term human consequences of extraordinarily stressful events and to promote effective methods of preventing or ameliorating the unwanted consequences."* The objectives of the organization were to: 1) recognize achievement in knowledge production; 2) disseminate this knowledge through face-to-face contact with colleagues; and 3) make this information available through other knowledge transfer media, especially print media.

Figley proposed that the group be named a "society," since the term connotes a learned group of like-minded colleagues. "Traumatic Stress Studies" was viewed as the name of the field at that time and represented, as reflected in the definition of the term traumatology at the start of this article, by the *investigation and application of knowledge about the immediate and long-term consequences of highly stressful events and the factors, which affect those consequences* (Figley, 1986a,b).

Final Thoughts

Much has been accomplished in the field of Traumatology over the last 20 years, but there is still much more to be done. Currently, the most neglected trauma populations are survivors of domestic violence (only recently have the traumatic consequences of their ordeal been discussed and studied), survivors of work-related trauma — especially among non-skilled jobs including but not limited to minors, migrant workers, and factory workers — and child survivors. Although there are publications about children, there is only limited research on children exposed to trauma, particularly very young children.

Though we know a lot about the neurophysiology, psychology, and psychobiology of trauma, we know very little about the systemic consequences of trauma. We need to know much more about how families, couples, parent-child and other family relationships are affected by trauma. Moreover, we need to know more about how groups — be they work groups, social groups, communities, or nations/cultures — are differentially affected by and recover from trauma over time.

The major obstacles to the development of the trauma field have been ignorance and fear. The ignorance lies in not being aware of the growing body of knowledge that supports the field. The fear is about fear itself, to paraphrase a former U.S. President. If we acknowledge that war traumatizes its combatants, then we must face that reality when committing our young to battle. If we acknowledge that a high percentage of U.S. females risk being sexually assaulted sometime in their lives and that the assault could cause lasting emotional wounds, then we must face that reality and prevent such assaults, etc. Social movements often force society to face and eliminate fear and ignorance. They typically strive for social justice. The traumatic stress movement is focused on prevention as well as mitigation of traumatic stress.

The future looks promising. There is a movement to insure that trauma-informed treatments including evidence-based practice is a standard of care for the traumatized. It is about time, because for too long the traumatized have suffered through waves of innovative interventions that are not appropriate for traumatized persons (Figley, 2002b).

⁵Those attending the meeting became members of the Founding Board of Directors: Ann Burgess (Vice President), Yael Danieli, Charles Figley (President), Bernard Mazel, Robert Rich (Secretary/Treasurer), and Marlene Young. Scott Sheely was selected as Executive Director.

Certainly it would be important to monitor the development in the emerging field of Psychoneuroimmunology (PNI) and the discoveries that focus on trauma and stress; both traumatic and combat stress injuries (cf., Figley, Hall, & Nash, 2009). The development of promising assessment methods such as the New York PTSD Risk Score (Boscarino et al., 2012a; 2012b; 2012c; 2011c), enables us to study large numbers of medical and behavioral health records to determine who is most at risk and in need of treatment, as well as who is not.

There are promising diagnostic developments related to biomarker methods for assessment of behavioral health, including key biomarkers that can be now easily measured by quick, low cost saliva samples (Boscarino, et al., 2012d; Figley, Hall, & Nash, 2009). There should be greater emphasis away from psychopathology and more toward resilience and growth, especially in efforts to offset the negative consequences of the PTSD diagnosis.

Other promising areas include (a) developing neurologically-based interventions for memory management; (b) discovering the best biomarkers of both stress injuries and the risk for health conditions following trauma exposure; (c) recognizing the extraordinary impact of trauma on all aspects of peoples' lives; (d) identifying underserved trauma populations, most notably children, the developmentally disabled, and the frail elderly; and, finally, (e) assessing the impact of early, brief interventions on the prevention of PTSD and the concomitant neurologic acceleration of fear extinction following treatment.

Conclusion

The 200th anniversary edition of the Journal is an opportunity to ponder the extraordinary developments in understanding human behavior and the variety of responses to trauma. Certainly the attack on New York and Washington, DC on September 11th in 2001 is an important date for those of us who study trauma, but it is hardly the first major event to occupy trauma investigators and practitioners. The authors have experienced trauma individually as people and as war veterans. More importantly, they have lived, studied, and published about the impact of trauma for more than 30 years.

Though these years of development, however, there was always a reference point for our work: those who experienced it and those who provided services to them. The Green Cross since its inception, for example, has provided pro bono services to the traumatized and, like other volunteer organizations focuses on post-disaster human services.

The attempt here was to point out the historic utility of JNMD, that helped prepare us for 9/11 and other major adversity in the world, but especially in the US. As a result, the field of Traumatology has emerged (together with the field of traumatic stress studies) as one of the fastest growing areas of both science and practice. All the major scholarly and mental health organizations have committed considerable resources to trauma-related matters over the past 20 years. This is paralleled by the increased interest in trauma among the general public. Yet remnants of the field can be found long ago in the first medical writings.

Figley and Boscarino's journey as trauma scholars is similar as former Vietnam veteran warriors who returned, completed our education, and embarked on careers as professors and researchers. Their education and careers were shaped by their experiences in war.

The challenge of the field of Traumatology is to recognize that science, practice, policy, and social activism are linked and operate best when there is mutual appreciation for each. The roots of traumatology are deep and intimately associated with the *psychological mechanisms of the human being*, with all its complications and fears. The fruition of Traumatology, like

the wisdom disseminated by the articles and reports in this Journal, are how we *apply* this understanding for ourselves, for our children, and for those who seek our help.

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