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ABSTRACT

Indian country presents even the most seasoned and careful researcher with numerous methodological issues. Two of the most salient of these are appropriate understanding of postcolonial stress in tribal communities, and the use of participatory action research methods and models in a culturally sensitive manner. This paper explains postcolonial stress disorder theory as it applies to tribal people and analyzes other papers on research methodology from this larger monograph within the context of this theory. A model of neurodevelopment is sketched that covers brain development in the child, implications of adequate caregiver behavior for the child's development of self-regulatory capacity, implications of inadequate caregiver behavior (including behavior of caregivers in stress) for development of psychopathology, and compromised behavioral immunity (reduced resiliency). Across the generations, sources of unresolved historical grief and family stress that impacted Native parenting practices and child development included dispossession, disease, loss of spirituality as a coping mechanism, war, physical and sexual child abuse experienced in boarding schools, tribal termination, relocation to cities, poverty, and alcohol abuse as a coping mechanism. Implications of postcolonial stress effects for research with contemporary tribal communities are discussed, and principles for participatory action research in tribal communities are outlined. Use of the postcolonial stress model and terminology in the other presentations is evaluated. (Contains 59 references.) (SV)

Focus on Cultural Issues in Research: Developing and Implementing Native American Postcolonial Participatory Action Research

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Dedication

Mike Desjarlais: February 1960—August 1978

Of all my family members, you have been the one who has often crossed my mind, and led me to wonder who, what, how, and, most poignantly, why... So, I've asked our brothers and our father that question. Our father said that it was a puzzle and that you were watching that DeNiro film, The Deer Hunter, *over and over. One brother remembers a strong-willed and independent little boy and said you had a look in your eye that didn't fit in the last photo he saw.... He still sees you in his dreams. One brother remembers that you were always playing tricks on people and full of humor...you were supposed to be together with him the next weekend and the event was all shrouded in controversy and mystery.*

For me, it was the wondering why that came with a sense of loss...and I realize that in part asking myself why has shaped who I've become. I thought a lot about Native people and their losses and the manner of these things. So, I've written down what I think begins to answer the why, at least for me, in this paper. This paper is for you, little brother, and it is for all the injured young Native men and women who have chosen to take the path of suicide. In beginning to try and understand why, I hope I am honoring you...all of you. The Shawnee poet wrote about an elder, Horse Man, who had passed over:

> *I have seen the rain speak and the wind dance. I have seen the lightning knife cut the sky. I have seen the hills at the first light of day whispering secrets in the Southwind People's ears. I am happy now. I am no longer thirsty. I dance a warrior's dance. I am not sick, I am free! This night I dream a new dream! Now, I come to drink the stars! (Jennifer Pierce Eyen, 1997)*

In time, we will dance that warrior's dance together..."Ike."

Joseph B. Stone

Clearly, Indian Country presents even the most seasoned and careful researcher with numerous methodological issues. Two of the most salient of these methodological issues represent complex and interwoven challenges: 1) appropriate understanding and acknowledgement of postcolonial stress in the tribal communities, and 2) the use of participatory action research methods and models in a culturally sensitive manner (Brown & Tandon, 1983; Brydon-Miller, 1997; Duran, 1984; Duran & Duran, 1995; Locust, 1995; Lewis, Duran, & Woodis, 1999; McTaggart, 1991; Park, 1999; Walters & Simoni, 1999;

Weissberg & Greenberg, 1998; Whyte, Greenwood, & Lazes, 1989; Wisner, Stea, & Kruks, 1991; & Yellow Horse Brave Heart, 1998).

While it is beyond the scope of this critique to describe fully the postcolonial stress theoretical perspective, we must briefly acknowledge the issues of trauma and grief, which robustly impact tribal peoples across and within generations. This has led to Natives and tribal families being immersed in an intergenerational and intragenerational crucible of stress. Thus, it follows that a higher level of posttraumatic stress within First Nation individuals, families, and communities, and also secondary consequences similar to those exhibited by Jewish Holocaust and Khmer Rouge survivors, exist as a result of postcolonial stress (Last & Klein, 1984; Nadler, Kav-Venaki, & Gleitman, 1985; Rowland-Klein & Dunlop, 1998; Sack, Clarke, & Seeley, 1995; Yehuda, Schmeidler, Elkin, Wilson, Siever, Binder-Brynes, et al., 1998). Consequently, a high incidence and prevalence of psychiatric disorders and social problems, per se, lateral violence, and high rates of substance abuse secondary to posttraumatic stress are observed in indigenous peoples (Ball, 1998; Gagne, 1998; Nagel, 1998; Weaver & Yellow Horse Brave Heart, 1999). In 1992, Herman suggested that the symptoms of a sequelae of prolonged and complex trauma across time on psychological functioning might be very significant. The primary effects of this sort of stress in the lives of long-term sexual abuse survivors and combat veterans are a highly coherent description of many of the symptoms and issues faced by tribal people (Ford, 1999; Ford & Kidd, 1998; Zlotnick, Zakriski, Shea, & Costello, 1996). At this point, I would like to discuss the methodology for this review.

Review and Methodology Procedures

The primary task for this critique was the review of papers provided to the author prior to their presentation and discussion at the recent American Indian Research and Program Evaluation Methodology Symposium, and published in this monograph. In addition, the author reviewed two recent Fisher and Ball (2002a, 2002b) articles on postcolonial (or tribal) participatory action research, the reference lists of several recent books, several review articles, and various other published studies and documents, and also manually searched several recent journals. Keywords included *posttraumatic stress, postcolonial, intergenerational trauma, unresolved historical grief, resiliency, attachment, neurodevelopment, developmental psychopathology, participatory action research,* and *collaborative community research.*

Numerous studies, articles, and books were located that contained relevant information referenced in the body of this paper. The author used the postcolonial stress theory and the postcolonial participatory action research model proposed and described by Fisher and Ball (2002a, 2002b) as the basis for developing a coding instrument that was used to analyze the reviewed papers. It is important to discuss research and evaluation methodology in First Nations communities within the context of a postcolonial stress theory.

Next, I will describe the general background of the postcolonial stress disorder theory as it applies to tribal people, and then move to a brief discussion of my personal theoretical perspective on the origins and implications of postcolonial stress in tribal individuals, families, and communities.

Postcolonial Stress Disorder

Intergenerational Postcolonial Stress and Tribal Families in Stress: Neurodevelopment, Developmental Psychopathology, Reactive Attachment Disorder, and Compromised Behavioral Immunity

Brain Development in the Child

Clearly, the literature in the scientific area of attachment and infant mental health is vast. It is not my goal herein to offer a complete theoretical discussion of attachment, regulation, or infant mental health. Rather, I am

providing a simplified version of this complex area as a heuristic mechanism to initiate further discussion of the issues central to attachment, self-regulation, and infant mental health as a possible mechanism to describe the occurrence of postcolonial stress in tribal peoples. It is not my goal to suggest that this perspective on postcolonial stress is right or correct; it is my goal to suggest that it might be considered and investigated for potential value as a possible correlate to postcolonial stress. It is possible that the description of tribal history might have a relationship with attachment, self-regulation, and infant mental health that has some descriptive value as an influencing factor in postcolonial stress. Further, perhaps researchers should consider taking postcolonial stress into account as an important variable in developing a participatory research agenda with tribal communities, even if this description of the possible relationships of attachment, self-regulation, and infant mental health ultimately fails the scientific test.

Recently, B. Perry (personal communication, May 1, 2002) asserted that the first four years of life are the most critical for brain development of the child. Borrowing from a description given by Perry, I would like to provide a simplified description of brain development during the first four years of life. Initially, the infant's cognitive abilities are limited by the not fully developed prefrontal cortex and nerve fiber system that are involved with thinking and memory (representation of visual and verbal experiences). Neonates appear capable of storing and retrieving sensory information even delivered to them prenatally; however, lacking speech, they are unable for some months to engage in the type of inner speech that one might characterize as thought. During this initial period of time, the infant is capable of feeling arousal because the limbic system is well enough developed to generate feelings of arousal (Nieuwenhuys, Voogd, & van Huijzen, 1981; Papuz, 1937).

I believe that one important goal of infant behavior is emotional regulation, which is the effort to find calmness through control, modulation, and mediation, when unmet needs or noxious environmental events cause an uncomfortable arousal state, thus achieving homeostasis or "emotional balance" (Post, 2002). Thus, some of the reasons infants cry include signaling their experience of painful arousal to the caregiver in order to be fed, cleaned, or when they are otherwise uncomfortable (Post, 2002). Self-soothing behavior is a complicated area to discuss and understand; perhaps infants learn to self-soothe by recalling a representation of the caregiver, for example, via transitional objects such as blankets, stuffed animals, etc. They might also be soothed by their caregiver's voice (prosodic verbal memory) and items of clothing that smell (olfactory memory) like the caregiver. Perhaps one critical aspect of the infant becoming capable of self-regulating its internal limbic system-mediated arousal is that this capability is learned through the type of response that the infant receives from caregivers or parents to its signals of need (Schore, 1994; Stern, 1985; Greenspan, 1981).

In general, although the range of caregiver responses to children's needs is quite wide, I would like to point out the effects of the two polar extremes of caregiver response to the infant's development of a capacity to control or modulate its own arousal. These polar extremes are the responses of *adequate caregivers*, who equitably meet the child's developmental needs for care that facilitates adaptive brain development, versus the responses of *inadequate caregivers*, who do not adequately meet the child's developmental need for care that facilitates adequate brain development. Additionally, there are "difficult to soothe" infants who present temperaments that challenge adequacy in caregivers, as well as reverse socialization processes that include "slow to warm" infants who leave caretakers feeling rejected and gradually less willing to be involved in attachment and bonding behavior with the infant. In the next section, I would

like to consider a simplified description of adequate caregivers and the implications for child brain development.

The Implications of Adequate *Caregiver Behavior for Child Brain Development*

Consistent caregiver response to a child's expressed needs and the caregiver's unconditional attention to the child are likely the most significant and important features of caregiver-child interaction underlying adaptive brain development of the child (Noshpitz & King, 1991). For example, if a child cries when in an arousal state related to a basic need (food, comfort, safety, etc.) and the caregiver responds in an adaptive and beneficial manner, the child becomes calmer and over time more capable of self-regulation (soothing itself or modulating its own limbic system-mediated level of arousal). First, the caregiver provides the desired or needed items or care. It is likely that of greater importance to the child's adequately developing the capacity to regulate arousal (soothe itself) is the effect of the caregiver's contact and soothing behaviors during the interaction (Amini, Lewis, Lannon, Louie, Baumbacher, McGuinness, et al., 1996; Gazzaniga & LeDoux, 1978; Heineman, 1998). A caregiver who consistently picks the child up and holds the child close and who is simultaneously in a relaxed and calm state will physically impart that regulated state to the child. The child will synchronize and regulate heart rate, breathing, and state of muscle tension to those of the caregiver. Thus, through the child's experience of being held and soothed, its brain is repeatedly stimulated in the process of self-soothing or regulation of arousal that parallels the regulated state of the caregiver. Over time, with consistency, as the child's brain is developing, this process becomes second nature to the child (e.g., simultaneously, the brain of the child develops the capacity for self-regulation of arousal and the process of self-regulation of arousal is learned) (Schore, 1994). Of interest, simultaneously, the development of the child's prefrontal cortex and the innervation of the brain (growth of nerve fibers connecting various areas of the brain) is occurring during the first few years of life. This process of brain development and innervation underlies the development of various areas of the brain communicating with and signaling to each other with biochemical neurotransmitters. Thus, neurodevelopment leads to communication between the prefrontal cortex and the limbic system (Schore, 1994; Birch, personal communication, June 4, 1999).

This is tremendously important, because simultaneously with the developing capacity for self-regulation developing during consistent caregiver responses, the child is also developing the capacity to maintain a set of internal verbal, visual, and auditory images (stored and integrated in the prefrontal cortex). Clearly, these processes are dependent on approximate ages and sequences of development. Receptive language precedes expressive language, sometimes by years in boy infants. Therefore, the question arises, how does understanding speech at 10 months help in self-regulation? For example, a mother smiles and says "no" gently to a 10-month old daughter and the baby clearly stops, smiles, and hesitates, watching the mother carefully. In this case, the mother did not have to regulate the child herself, using body contact, and apparently speech extended her range of interaction as well as the baby's ability to self-regulate via understanding of the verbal cue. The complexity of how a child can develop the capacity to integrate and control self-regulation through improved communication between the prefrontal cortex and the limbic system, based on the growth of nerve fibers connecting these areas of the brain, is indeed a complex process that exceeds the scope of this paper to describe. Apparently all aspects of the caregiver and the context of the care become associated with increased capacity to self-regulate arousal. Thus, the child can then produce internal visual, verbal, and auditory representations of safety and care that are learned during interactions with the caregiver. The child integrates these representations of visual, verbal, and auditory stimuli in the

prefrontal cortex and attaches meaning to them. This process becomes the basis of a biochemical and electrical message from the developing prefrontal cortex to the limbic brain through the newly developing connective nerve fibers. It is likely this complex developmental process of caregiver-child interaction occurring simultaneously with brain development that underlies a child's capacity to self-regulate arousal (Emde & Buchsbaum, 1989; Fair, 1992; van der Kolk & Fisler, 1994). Two of the most critical aspects of this developmental process of self-regulation are that 1) the caregiver is consistent and available to facilitate the developmental process of self-regulation, and 2) the caregiver is capable of self-regulation and is consistently and predictably self-regulating her or his arousal during this developmental process. Adaptive parenting is likely adequate facilitation of child attachment.

There exists a polar opposite in parenting style, which is the inadequate caregiver model, contributing to development of dysregulation of arousal. Perhaps chronic dysregulated arousal in a child can be described as reactive attachment disorder and the issues that surround the dysregulation of arousal of might be a product of caregiver-child interaction.

The Impact of Inadequate *Caregiver Behavior on Child Brain Development*

The scientific literature is clear: there are several types of caregiver behaviors that are inadequate, per se; excessive anxiety, depression, substance abuse, and psychotic process in the caregiver underlie the expression of psychopathology in the child and developmental psychopathology as the child ages and grows (B. Post, personal communication, June 25, 2002). Of course, it is equally reasonable that within families affected by or functioning within stress, caregivers in stress act as the primary facilitators of the children's development. Therefore, I believe that in addition to caregivers with defined psychiatric conditions, such as those discussed above, the caregivers in families impacted by ongoing stress are also often rendered inadequate in their provision of developmental care to the children in these families by the stressful conditions impacting the families.

Caregivers who have anxiety, depression, or substance abuse on board are less consistent, are less capable of self-regulation, and thus are less capable of providing an adaptive developmental experience during the aforementioned critical period of child neurodevelopment. Within families impacted by stress or families where the caregiver is compromised or inconsistent, the child does not receive the type of consistent care needed for self-regulation of arousal. Additionally, in many cases, caregivers in these types of families are themselves not as capable of self-regulation. Therefore, the child cannot directly experience an adult model of self-regulation while in direct contact with an adult who is capable of self-regulation. Thus, the child's brain cannot fully develop a capacity for self-regulation of arousal.

I believe that inadequate caregivers can not provide the child with a consistent experience in self-regulation because of depression, impairment by substance abuse, or extreme anxiety and concurrent incapacity to self-regulate arousal. Consequently the child experiences an inconsistent process of what it means to be soothed, and it follows that the child develops an inconsistent ability to regulate arousal. Often, children with inadequate or inconsistent caregivers receive care in intermittent spurts of stimulation. Therefore, these children often do not develop the capacity to regulate arousal in a consistent manner. These children's limbic systems actually do not develop the capacity to regulate arousal consistently as a result of inconsistent stimulation during childcare.

Caregiver attention that comes in spurts of stimulation (positive but inconsistent and/or varying to negative) subsequently conditions the child to regulate arousal by engaging in a stimulation-seeking process. These children

become indiscriminate in the types of stimulation that they might elicit to activate arousal-regulatory mechanisms in their limbic systems. Many times children conditioned indiscriminately "act out" in a manner that elicits negative stimulation or punishment, because this is equally effective in helping them activate their capacity to regulate arousal. In these situations, the child acts out in order to be punished or abused, because even that type of response stimulates the brain to dampen uncomfortable levels of arousal (to self-regulate).

Of course, if inconsistent caregiver attention creates a limbic response that is sensation-seeking as a means of stimulating regulation, there is an unfortunate additional effect to the developing prefrontal cortex and innervation. That is, the verbal, visual, and auditory images of the caregiver and environment that are integrated into meaning in the prefrontal cortex are disjointed and inconsistent (Brown, 1991; Coen, 1985; George, 1996; Krystal, 1990, 1991; Green, 1995; Dubowitz, Black, Harrington, & Verschoore, 1993). Furthermore, in addition to the fact that the verbal, visual, and auditory images that stimulate the flow of chemical and electrical messages that are designed to control limbic arousal might exist in this disjointed manner, the actual set of nerve fibers is smaller and less robust. That is because the development of these nerve fibers is dependent, in part, on adaptive developmental care (Rakic, 1991).

The child receiving inconsistent care develops a limbic system that regulates arousal based on stimulation that is both positive (adaptive behavior) and negative (maladaptive behavior). Additionally, these children often have cognitive distortions about what represents appropriate stimuli for regulation of arousal. Finally, they often must seek intense stimulation in order to create a biochemical and electrical message of great enough magnitude to overcome the deficient nerve fibers connecting prefrontal cortex and limbic system.

There is a second problem that children experience from care given by adults who can not control their own arousal. These children can not develop the process of self-regulation because they have no model or contact with another human who is self-regulated. These children must replicate the level of self-control and self-regulation experienced by their caregiver. If that is limited, the children's capacity to self-regulate arousal is limited. We are aware that this has long-term implications because if the critical period of brain development passes, then it is likely that these children will always have greater difficulty with regulation of arousal. One model for understanding this is recent research on the children of depressed caregivers versus the children of nondepressed caregivers. On a brain scan study of infants of depressed caregivers, the infants had similar responses to the depressed caregiver walking *toward* them as infants of nondepressed caregivers had to their caregiver walking *away* from them. It was postulated that these infants might have experienced dysregulated arousal during interactions with depressed caregivers (B. Post, personal communication, June 26, 2002).

Obviously, children with inconsistent caregivers or caregivers who could not regulate their arousal become adult clients with up and down behavioral phases across time of living well, not living well, living well, not living well. Falling in love, falling out of love, falling in love, falling out of love with very exciting and toxic people who are highly stimulating. Adults who get themselves into risky situations as a mechanism to stimulate modulation of arousal. Perhaps they jump out of airplanes with parachutes for fun. Perhaps they engage in high-risk sexual escapades in order to have the type of stimulation that helps them regulate their arousal. Perhaps they engage in substance abuse in order to use the derivative chemical interactions secondary to substance abuse as a mechanism to regulate arousal.

Often when children have had inconsistent parenting in infanthood, as adults they seek stimulation, they ride on this wave of stimulation, they must have stimulation in order to regulate arousal. But that stimulation is not necessarily provided by consistent, healthy, or adaptive behaviors. Furthermore, the child whose early capacity to self-regulate is compromised by inconsistent or unregulated developmental interactions with the caregiver is set up to be an adult susceptible to anxiety, depression, and consequently substance abuse. I call this result of developmental process *compromised behavioral immunity* (CBI).

Compromised Behavioral Immunity

Initially, I became aware of the phenomenon of compromised behavioral immunity as I worked with war veterans and victims of violent sexual assault as adults. In both of these populations, I found that the impacted individual might have a very similar experience to his or her peers. However, some individuals responded well to treatment and improved rapidly, but others did not. As I became more aware of the clients' individual histories, I saw a trend emerge. Individuals who appeared to make good progress in therapy and to improve from treatment usually reported much more adaptive developmental experiences as children and adolescents. They usually had adequate caregivers and usually were not impacted by as many or as intensive a set of developmental insults as adolescents. On the other hand, individuals who reported experiencing inadequate caregivers as children usually exhibited a greater magnitude of psychiatric symptoms as a result of war experiences or adult sexual assault. I term this phenomenon compromised behavioral immunity (CBI), which is the result of the impact of inadequate early developmental experiences on resiliency in adulthood.

Compromised behavioral immunity (CBI) seems to reduce resiliency in adults, and thus underlies the expression of psychiatric disorders of greater magnitude. The experience of families in stress (wherein the adults are not as available to facilitate child brain development) and families with caregivers who have psychiatric and substance abuse issues describes the milieu of development leading to dysregulated arousal, reactive attachment disorders, and compromised behavioral immunity. This was the crucible of child development for tribal families and their children across the past five hundred years. I believe many psychiatric and substance abuse issues of postcolonial stress emerge from and are described by the following model of colonial impact on tribal communities, families, and individuals.

Postcolonial Neurodevelopment and Developmental Psychopathology In First Nations Communities

The theory of neurodevelopment sketched above is greatly simplified with respect to the large body of scientific literature that is available, and a complete description is clearly beyond the scope of this paper. However, perhaps this simplified model of attachment, self-regulation, and infant mental health has some descriptive value when integrated into a postcolonial stress model. I think we need to marry our concepts of historical trauma, the postcolonial mechanisms that have shaped tribal communities and families, and the impact of these events and systems on the development of tribal children across generations. Understanding these interrelated phenomena and dynamics leads to understanding the neurological impact of what being a tribal person in this country has brought to each and every one of us who are tribal people.

This model describes a simplified version of neurological development and human development in the Native community across the past several generations. Further, one must bear in mind that this postcolonial stress model demonstrates the tremendous resiliency and strength of survival demonstrated across the generations. Perhaps one reason that this resiliency and survival in the tribal community is evident is related to the strength of tribal spirituality.

Another thing to remember is that the events discussed within the various generations in this section are examples of ongoing processes, so the reader must consider that the negative and oppressive dynamics described herein and experienced by our tribal ancestors are in many cases continuing for contemporary tribal people in the U.S.A. Finally, it is important to note that this postcolonial stress model of intergenerational neurodevelopment and developmental psychopathology can likely be adapted and applied to other indigenous colonized populations, such as New Zealand Maori, Australian Aborigines, South American Indigenous, and South African Blacks.

This intergenerational postcolonial stress model of neurodevelopment and developmental psychopathology secondary to colonization and compromised behavioral immunity in the tribal communities is by no means representative of any given individual Native family. I initially thought about this intergenerational postcolonial stress model as it applied to understanding my personal tribal family history for heuristic reasons. Following my professional training, I later integrated scientific aspects of the postcolonial stress model and generalized the theory. I think the generalized postcolonial stress model is somewhat representative of most tribal people's developmental experiences, even given the need for a more robust examination and subsequent integration of attachment, self-regulation, and infant mental health literature if warranted. Furthermore, it is clear that a growing number of studies support the idea that intergenerational transmission of attachment and attachment problems exists (van Ijzendoorn, 1995a, 1995b; van Ijzendoorn & Bakermans-Kranenburg, 1997; van Ijzendoorn, Juffer, & Duyvesteyn, 1995; Zeanah, Finley-Belgard, & Benoit, 1997).

Dispossession and Biological Warfare

I'll start my description of postcolonial stress in the early 1600s on the east coast and with the first colonization of this country. Early in the colonization period tribal people were dispossessed of property: the enforced movement of Native people from the prime country in which they lived. Tribal people experienced forced moving from the places that they loved and were spiritually attached to. Of course, dispossession was almost always enforced at musket point and with violence.

Beginning with early tribal dispossession, we can begin to see correlation with posttraumatic stress in the dispossessed Native communities, families, and individuals. I assume that the first generation of dispossession, which occurred in the eastern coastal area of the U.S in the 1500s and 1600s, began inducing anxiety, in the form of posttraumatic stress, into the tribal community.

Occurring simultaneously with tribal dispossession was the biological warfare that began to occur back in that era. Biological warfare also introduced anxiety in the form of posttraumatic stress disorder into tribal communities, families, and individuals. The colonizers distributed blankets infected with smallpox and other foreign bacteria and viruses to decimate tribal communities. Initially, that type of biological warfare killed a lot of Native people outright. It also made the communities, families, and individuals less capable of engaging in their customary economic and social process. It destroyed our Native communities' capacity to engage in the economy, that was mainly gathering and hunting. If a lot of the gatherers and hunters are down and sick and dying, they can't gather and hunt. If the other tribal people are helping them, then these other Natives can't gather and hunt while providing care to the sick.

This early biological warfare conducted against the Native communities was very destructive to traditional child-rearing patterns and to the tribal knowledge base. It was very destructive of our tribal knowledge base because our Native libraries were the elders, who kept tribal knowledge in the form of oral histories. The elders were most susceptible to disease, and thus our historical knowledge that

stretched back as an oral history for centuries was devastated by this biological warfare as elders died. The biological warfare also devastated children, because they were young and susceptible to infection.

In some tribes, when children were born the parents took a whole year just to nurture that child. Other tribal members hunted and gathered for them while the parents just took care of their child. Then at the end of that year the child was turned over to the tribal elders and was raised to become who they would become. The tribal elders would choose to teach the child what he or she would need to learn to optimally function and support the tribe. So you can imagine the effects of biological warfare impacting these two portions of our tribal community.

The most pernicious effect of the biological warfare was its impact on tribal spirituality. In our First Nation communities the capacity to cope with difficult situations and/or health crises was enhanced or made greater by our Native spirituality. Our tribal spirituality was tied in to the context within which it was practiced. Native spiritual practices, such as smudge, or whatever we burned, the smell of that, the chanting, the drumming, the use of tribal medicine, and the presence of tribal healers all occurred in an environment where indigenous people were confident that it influenced healing. When the spiritual ceremonies and practices that enacted healing would occur, of course healing would follow, because those ceremonies and practices would activate the tribal member's immune system. People were confident that they would get well. Their immune system would be enhanced by a ceremonial and so they would get well. However, when a foreign microbe invaded the tribal community, the tribal member's immune system could not cope with that foreign microbe. Therefore, even if an enhanced immune function occurred in a tribal member secondary to a ceremony, the person still did not get well because the immune system could not cope with the microbe. In fact, even, the most highly respected medicine people and healers could not help others or themselves. So, we saw the abrupt and total failure of tribal spirituality to activate the immune system and help Native people deal naturally with the microbes introduced by the colonizers. Of course, the same tribal spiritual practices were used to cope with emotional disturbances secondary to the trauma of illness and dispossession. Consequently, when their tribal spiritual practices were disrupted, what coping mechanisms would Native people turn to for emotional coping?

I think that whole process of tribal lifestyle, health care, oral history, child rearing, and emotional coping was extremely disrupted by the biological warfare that was initiated about 500 years ago. Of course, in addition to these effects of biological warfare in the Native community, individual tribal people developed posttraumatic stress disorder as a result of their family members dying around them.

The First Generation of Anxiety and Depression Secondary to Colonialism

Of course, posttraumatic stress disorder is an anxiety disorder that exists on a continuum with depression (at the opposite polar extreme). Furthermore, subjectively speaking, anxiety feels very much like arousal. If one is anxious one feels as if one is experiencing a higher level of arousal most of the time. If one doesn't have a coping mechanism to help reduce or regulate that anxiety, one is susceptible to becoming depressed. For these anxious individuals, their experience with anxiety is like a dog sitting on a steel grating getting electrical shocks that it can not escape. The dog jumps as a result of the electrical jolt and attempts to escape. Historically, I think that following a jolt of anxiety tribal people used ceremonial community-based spiritual coping to reduce that anxiety. However, when tribal spirituality was disrupted, these Natives' subsequent experience was similar to a dog receiving uncontrollable electrical shocks but unable to escape them. Every time something happened to the Native person, that person's

anxiety rose with nothing to control it. Soon, no matter how hard electricity hits the dog, he just lies on the grate. In parallel, the tribal person continued feeling a lot of anxiety but could not regulate it with the accustomed spiritual practices. These Native people felt helpless to regulate their anxiety. Tribal people began experiencing a shift in the anxiety-depression continuum. They developed depressed mood stemming from uncontrollable anxiety that was no longer ameliorated by use of tribal spiritual practices as coping mechanisms.

So, during this generation, the first generation of colonization, we really start to see our first tribal people experiencing anxiety and depression disorders manifested in the families and in the caregiver's behavior toward the children. Furthermore, these tribal families were in continual stress from other external factors predicated on colonization.

It is logical that parents who are in a crucible of family stress, such as oppression, racism, warfare, and other factors predicated on colonization are distracted from their children and child-raising practices. These tribal parents were distracted by anxiety and unavailable because of depression. Thus, this generation of Native parents became less than optimal caregivers for the children's developmental processes. So, we have our first generation of colonized effects on tribal families (families within which ongoing stress, anxiety, and depression are manifested). Of course, the dispossession and biological warfare are ongoing processes across the eastern seaboard, so it is highly likely that most tribal people are affected. If most tribal people are affected, then most young tribal people who marry and have children become families in stress, with these new parents having their own issues from becoming the first generation of Natives manifesting anxiety and depression as a result of the effects of colonization.

This is our first generation of colonization-impacted Native parenting practice. By definition, we have established that children who receive parenting from inadequate parents (families in stress, anxious parents, or depressed parents) are more likely to manifest reactive attachment disorder or a dysregulation of arousal. This gives us our first generation of Native children beginning to have some dysregulation of arousal, resulting in reactive attachment disorder and compromised behavioral immunity. Postcolonial stress-impacted Native adults (anxious and depressed) are providing parenting within families under further continual colonization stress from external factors.

We have defined reactive attachment disorder as stemming from a high level of unregulated arousal that sets up a child for compromised behavioral immunity and greater susceptibility to developmental insult. Furthermore, we must be aware that the discrete generational events or occurrences we are discussing in fact occurred across generations and are cumulative effects from one generation to the next generation. So it wasn't just this generation of tribal people having dispossession and biological warfare occur. The next generation of Natives experienced the Indian Wars, but dispossession and biological warfare continued during the Indian War period. I will describe the Indian Wars and the impact of posttraumatic stress on the tribal community in a more definitive manner in the next section of this paper.

Neurodevelopment, Developmental Insult, Posttraumatic Stress Disorder, and the Indian Wars

Envision Colonel Chivington on the hill overlooking Sand Creek in Colorado and his pony soldiers in a skirmish line across the bend in Sand Creek. There is a camp of the Cheyenne in the bend of the creek, and it is dawn. Tribal people are getting up and preparing for the day. We see older people (men and women) and adult women and children of the camp getting up and breaking camp at dawn and getting water to start their day.

The fact that there are no Cheyenne men in the camp is why the U.S. cavalry is here. Colonel

Chivington sees this as a political opportunity to "put down an Indian insurrection." The Cheyenne men are off the reservation against the orders of the U.S. government. The Cheyenne men might be hunting because the rations provided to the tribe are not adequate and the people are hungry. Of course, oral historians suggest that the Cheyenne men might be off and engaged in the Ghost Dance religion, which is also against the government's rules.

Colonel Chivington is poised to attack the Cheyenne elders, women, and children at Sand Creek: it is politically expedient for him to prosecute the savages and it enhances his ability to be elected to office. Another famous pony solder, General Custer, tried that route to political office, also, and we saw how that turned out, but that's another story.

We'll envision Chivington's mini-guns on top of the hill overlooking the Sand Creek Cheyenne camp because that's where the colonel, being a good military man, put his mini-guns. Mini-guns are small cannon that are easily hauled by horse team. Of course, the Colonel, being frugal, loaded the mini-guns with grapeshot. Grapeshot was the stuff swept up off of the floor of the blacksmith shop at the fort—bits of metal from shoeing horses, nails, and other chunks of material. You can imagine that since grapeshot was a product of the fort's blacksmith shop it was mixed with large quantities of horse manure. That means grapeshot was very, very dirty and that being hit even in a non-lethal manner with grapeshot could induce sepsis. So, when shooting a mini-gun loaded with grapeshot at tribal people, it was not necessary to hit a Native directly. All that was required was a grazing wound or a scratch, which would induce sepsis or infection (more biological warfare). A Native injured in such a manner might die or lose an arm or leg.

Colonel Chivington sets mini-guns up on the hill overlooking the Cheyenne camp down in Sand Creek. The Cheyenne warriors are gone. The Cheyenne's buffalo hide lodges are not invulnerable to shells and shelling and these buffalo hide lodges can not turn away mini-gun grapeshot. The colonel is on the hill with his mini-guns loaded with grapeshot and he has his pony soldiers in a skirmish line across the river and he orders the pony soldiers to draw sabers because he wants to save on pistol cartridge rounds.

At dawn, when the Cheyenne people are breaking camp, Colonel Chivington orders the mini-guns fired. We hear a round of grape shot sprayed through the camp at Sand Creek that knocks tribal people over immediately, or wounds them with that deadly sepsis-inducing grapeshot so they might die or lose an arm or leg from infection later. Then the colonel sends his pony soldiers across the river with their sabers and they start hacking folks up. Now, this discussion of the Sand Creek massacre is only an example of the type of aggressive attacks on tribal communities that go on across the country over and over and over during the Indian Wars.

As a result of this type of scene, we have two hypothetical young tribal people coming out of the first generation's postcolonial stress-influenced parenting (tribal parents having some anxiety and depression). Thus, two hypothetical young Native people with some symptoms of unregulated arousal, reactive attachment, and resulting compromised behavioral immunity, getting posttraumatic stress as a result of their presence in the Indian Wars. Therefore, we now have a second generation of young tribal parents facing continued externally generated stress, secondary to colonization, and developing internal anxiety and subsequent depression, secondary to the Indian War experiences, impacting their parenting. Since this hypothetical young tribal couple is anxious, depressed, in a social crucible of poverty, dispossession, and forced movement from historical land base, biological warfare, Indian warfare, and disruption of spirituality, culture, and religion, we can assume then that they're not 100% invested in or capable of adequate

parenting. So, when this hypothetical Native couple has their children, they are raising the next generation of tribal children developing with unregulated arousal, reactive attachment disorder, and compromised behavioral immunity.

We are now two generations into this intergenerational process, so what is next on the colonial agenda for tribal people in this country? Since we're going to finish the Indian Wars, what is the next stage of colonial assimilation and acculturation? The next generation of postcolonial stress-impacted tribal people experienced the impact of the boarding schools.

The Federal and Religious Indian Boarding Schools, Neurodevelopment, Developmental Psychopathology, and Native People

Envision sending a young Native male to the federal Indian boarding school system. Let's consider the federal Indian boarding school system. Created by whom? General Richard Pratt created the federal Indian boarding school system for the express purpose of "killing the Indian to save the man." Now, when these Native children are sent to the federal Indian boarding school systems, who become their instructors and teachers? Who is there to teach these impressionable young Native students? Well, as you can well imagine, if Richard Pratt (retired pony solder general) is the superintendent of the newly formed federal Indian boarding school system, then it follows that he recruits other retiring pony soldiers as staff and teachers. So the largest group of teachers in the federal Indian boarding school system is retired pony soldiers: lieutenants, sergeants, enlisted men, etc.

The era of the federal Indian boarding school system continues to have pernicious effects in our Native communities, effects (often political in nature) that are observable even today. For example, Indian policemen enforced attendance of tribal children at the boarding schools. Indian policemen would go to other tribal members' families and forcibly take their children. Of course, in many cases, families resisted and serious fights would result, often resulting in either the death of Indian policemen or of tribal family members. In most cases, the Native children were taken to boarding school, ultimately. In the tribal communities, we still see political effects of that period of enforced boarding school attendance lingering three or four generations. In some tribal communities, we have families with incredible animosities towards one another but no rational reason why those animosities should be occurring. Tribal members who achieve political power often act out these animosities against one another within the political forum, rather than collaborating for the good of the tribe in general. Apparently, they can not overcome their historical animosity derived from the boarding school era, when an ancestor from one family was Indian police taking the child of another family's ancestor. Rather than the source of this dysfunction being tribal, it was the splitting or atomizing effects of the larger culture using one part of the tribe (the Indian police) against another part of the tribe (the families of students forced into the boarding schools). However, the old animosities still exist and are played out to the detriment of functioning in modern Native society.

The first things that happened when tribal kids got to the federal Indian boarding schools were that their hair was cut and they were prohibited from speaking their language, even if that was the only language they knew. These tribal children were put into regiments and into units and into uniforms.

Around the locations of the federal Indian boarding school system there are killing fields or vast unmarked cemeteries. These cemeteries contain the bones of the tribal children who died of broken hearts or diseases because they had been brought together from around the country with no immunity to one another's diseases.

At this point in time, tribal children in the boarding schools experience their first exposure to large-scale amounts of physical

and sexual abuse. Physical abuse was a mainstay of the discipline in the federal Indian boarding schools. As a result, our first generation of individuals return to their tribal communities trained in the boarding schools to use physical violence as a means of controlling family members: children and spouses. Family domestic violence, a product of learned behavior from the boarding schools, becomes widespread in tribal communities. Lateral violence spreads through our Native communities as an outgrowth of the violence practiced against tribal children in the federal Indian boarding school system. Further, clinician experience indicates that situational molesters are usually previously victims of physical abuse and that they molest out of a need for power and control. Thus, a generation of situational molestation or sexual abuse is introduced into the tribal communities as yet another form of learned behavior derivative from the boarding school era.

So, this is the experience of our hypothetical young tribal man in the federal Indian boarding school system: loss of culture, language (the carrier of culture), beliefs, values, etc., and the experiential introduction to physical abuse and subsequent learning of physical abuse as a control mechanism for family functioning. Finally, it is likely that the young tribal member attending the federal boarding school experiences the devastation of identity that accompanies physical (and sexual) abuse. This loss of identity and sense of personal power lead to the expression of powerlessness as situational molestation within the tribal community and family. Situational molestation to achieve a sense of power and control is acted out in the Native community and family as a form of self-perpetuating lateral violence.

Envision a hypothetical young Native woman being sent to a religious Indian boarding school. The religious Indian boarding school was the equivalent of the federal boarding school for the amount of physical abuse used to control the children. One good example would be in Canada, where there is a small reserve; in that reserve there are three generations of people, aged 55-65, 45-55, and 35-45 years. For many years, each of these groups has smaller groups in all the social and political arenas of tribal life, including the schools, the police, the legal system, the health system, and the political system. Never in the history of the tribe could Natives from one of these groups cooperate or collaborate with tribal members from the other groups. There was always dissension and conflict, apparently without reason and certainly to the detriment of tribal functioning in general.

Members of the youngest group of Natives (35-45 years) go into counseling and psychotherapy. In psychotherapy, members of the youngest group of tribal members remember and discuss sexual and physical abuse that they experienced at the hands of the slightly older group of tribal members (age 45-55). So members of the youngest group of Natives begin to sue members of the 45-55 year-old group of tribal members.

As a result of the stress of the lawsuit several members of the 45-55 year-old group of tribal members go for supportive psychotherapy. In psychotherapy, members of the middle group of Natives begin to think about their own abuse at the hands of members of the oldest group (age 55-65). The middle group of tribal members initiates lawsuits against the oldest group of tribal members.

So now we have a whole bunch of lawyers getting into the fray in this Canadian reserve, helping tribal people sue each other and splitting the community up. Of course, all these lawsuits are high profile, so the Canadian government gets in there and they hire a Native psychologist to find out what is going on. The Native psychologist finds out that on that tribal reserve there was a religious Indian boarding school with a domicile. The domicile was a four-story building for the Native children and for the religious group that came in to teach the children.

The religious group lived up on the fourth floor of the domicile. The oldest group of tribal

people mentioned above lived on the third floor, the second oldest group of tribal people lived on the second floor, and the youngest group of tribal people lived on the first floor. It is revealed to the consulting psychologist that as children, the tribal people on each floor were physically and sexually abusive to one another, the oldest children to the middle and youngest, and the middle children to the youngest children.

However, this whole process of tribal children abusing other tribal children derived from and was set in motion by the actions of the religious teachers. Religious teachers would come downstairs and be sexually abusive to the children on all three floors. But, these religious teachers did another thing that was very detrimental to the tribal children's future relationships with one another. The religious teachers used the oldest group of Native children to enforce their will on the second oldest group of tribal children, and used the second oldest group of Native children to enforce their will on the youngest group of indigenous children. The religious leaders set these groups of Native children at one another's throats in order to control them.

As a result, when these tribal children grew up on that Canadian reserve, three distinct political factions emerged in which the people hated one another, were unwilling to talk to one another, and could not collaborate politically for the good of the reserve. In addition, many members of these three groups also acted out in lateral violence: sexual molestation and physical abuse in the community as a result of this happening to them in the religious boarding school.

A really tremendous social problem evolves here for the tribe. Tribal members are acting out lateral physical abuse and sexual molestation against the children of the next generation, they can not cooperate or collaborate with one another at any level, and they are all suing one another. Probably the only good thing that happened was that once this phenomenon was understood, everybody from the tribe did finally collaborate. The tribal people got together and sued the religious group. But unfortunately healing wasn't emphasized in this collaboration. Apparently the hurt was so great that when this tribe started on the path to healing they stopped and stepped back and began the process of disagreement and social disruption again. The tribe couldn't tolerate healing together, so they're sort of stuck right now with this distinctly split-up community, as a result of the influence of their attendance at a tribal religious boarding school.

We have envisioned a hypothetical male tribal person from the federal Indian boarding school with some experience of physical abuse and possibly sexual molestation. Further, we envisioned a hypothetical female tribal member from a religious Indian boarding school with a history of sexual and physical abuse. Perhaps she attended a school similar to the religious boarding school in Canada. We know that people who have been sexually abused have difficulty protecting their children from being sexually abused. People who are physically abused often become what we call situational molesters—not pedophiles, but situational molesters who use sexuality as a way of achieving power and control. So a generation of tribal people came home from boarding school with sexual abuse techniques because they'd been taught that—tribal people who experienced physical abuse, so they have a need to cope with their own powerlessness, and who have histories of sexual abuse so they can't protect their children.

These outside influences of learned behaviors (sexual and physical abuse) are subsequently acted out laterally within our own First Nation communities, as happened on the reserve in Canada, as happens in our political system yet today. We see the lateral expression and continuation of physical or sexual abuse in our Native families and communities. That is how the physical and sexual abuse, the political divisiveness, and the difficulties in collaborating socially with one another were introduced to Native people and perpetuated

in the tribal community. Of course, as a result, they perpetuate themselves.

We now have this generation of Natives from the federal Indian boarding school and the religious boarding school with their physical and sexual abuse experiences. This implies that tribal people in this generation experienced posttraumatic stress disorder in the boarding schools, following a childhood characterized by unregulated arousal, reactive attachment, and compromised behavioral immunity, and leading to an adulthood with higher incidence and prevalence of psychiatric disorders.

These Native boarding school era survivors raise and parent the next generation of tribal children with dysregulated arousal, reactive attachment, compromised behavioral immunity, anxiety, and depression (still within a crucible of ongoing postcolonial stress). Also, a further complicating factor has been introduced to the tribal communities: lateral violence becomes an issue in our Native community because tribal people bring this type of abusive tendency forward and act it out. This next generation of First Nations people goes forward with dysregulated arousal, reactive attachment, compromised behavioral immunity, and experiences of physical and sexual abuse. In the next section, we will examine the effects of overseas service and wartime posttraumatic stress disorder in the tribal communities.

Wartime PTSD, Tribal Termination, Neurodevelopment, Developmental Psychopathology, and Tribal People

Tribal people, as a subgroup, are the most decorated veterans of foreign war in this country. Native warriors have joined the U.S. military and have gone to overseas conflicts and fought in battles for the United States with great ferocity, with the greatest incidence of being rewarded for being heroic. Furthermore, there is evidence in the Congressional Record that a much higher percentage of Native and other minority soldiers was placed in the front lines in Vietnam (D. Walker, personal communication, June 27, 2002). Of course, these warriors come home with posttraumatic stress disorder to a cultural and historical experience of combined loss of language, loss of culture, loss of spirituality, introduction of sexual abuse, introduction of physical abuse, loss of community, and dispossession. Previously, we discussed the fact that their postcolonial childhood experiences within Native families in stress contributed to a higher potential of dysregulated arousal and compromised behavioral immunity. In turn, this predetermined a less than adaptive response to the war-induced posttraumatic stress experiences. In this case, our young Native war hero comes home to a terminated reservation.

Termination was a U.S. government experiment in managing the "Indian problem" by declaring that the reservation and tribal systems within which a given tribe lived or with which it was affiliated were null and void—that the tribe and all the tribal support systems no longer were recognized by the U.S. federal government and thus no longer existed (Ball, 1998). Passing a Congressional law that stated the tribe was so terminated preceded termination of a tribe. Subsequently, the tribal people's group holdings were "nationalized;" the Natives were given a few hundred dollars and told they're no longer Natives and their tribe no longer exists. These First Nations people were than exhorted to go about their business. In 1998, Ball examined the effects of termination with respect to causing posttraumatic stress among the members of one Native tribe. The effects of termination were carefully compared to other forms of posttraumatic stress disorder-inducing experiences that members of this tribe had experienced, including deaths of tribal members, violence by the police, and other historical postcolonial experiences. Following termination as a tribe, these tribal people provided test scores indicating a rate of posttraumatic stress disorder that was ten times that of the U.S. population at large.

As a result of tribal terminations, yet another source of tribal posttraumatic stress disorder exists. At this point, we have a generation with two more sources of posttraumatic stress disorder: overseas war service and tribal termination. Envision equal opportunity trauma to our hypothetical Native couple. He went to war and she went through a tribal termination experience. Alternately, she went to war and he went through a tribal termination experience. It matters little what the mechanism of induction was for the developmental insults; what is critical is that these developmental insults accrue in addition to the historical postcolonial stress and concurrent ongoing postcolonial stress effects on the family that forms when this couple marries.

Imagine yet another postcolonial stress-inducing effect at this time to our latest tribal family. This postcolonial stress-inducing experience is called relocation. Before they actually meet, this young couple is sent through the U.S. federal relocation project, as individuals from two different reservations, to the city. The relocation program is designed to help young tribal people assimilate into the western economy and culture, by transporting them to the city and providing a small of amount of money to live on as they become established. What happens is that as he returns from war and is given a bus ticket to the city, and some "seed money" to begin a new life, she leaves the reservation because, as a result of termination, she no longer has a tribal setting within which to live.

Relocation, Alcohol and Alcoholism, Neurodevelopment, Developmental Psychopathology, and Tribal People

Both of the hypothetical Native individuals go to Los Angeles or Minneapolis or Seattle or wherever; no one speaks their language, it is difficult to communicate, and they don't have the skills to interact adequately in the highly commercialized western economy and market. But, the young Native people meet, form a couple, and have a family in the city. Let's say they are now living in relocation in Los Angeles, a foreign country with respect to their history, beliefs, values, communication skills, etc.

What happens is that this young Native couple lives in poverty, due to lack of job skills and language skills and ongoing racism and oppression. What coping mechanism do they have in the city to deal with all of the internalized pain or to regulate arousal? Of course, beverage alcohol becomes the answer to internalized pain and dysregulated arousal. A generation of tribal people is now living in the cities and is using alcohol excessively to cope with their pain and unregulated arousal (postcolonial stress). This young Native couple continues to bring forward into their family interactions and to their children the physical abuse and the sexual abuse from lateral violence they have experienced, the trauma of termination, the trauma of war, the trauma of relocation, the cumulative effects of postcolonial stress. As a result, Native children of this generation have dysregulated arousal, reactive attachment, and compromised behavioral immunity as a basis to combine with whatever developmental insults occur to them.

Since there's beverage alcohol being used extensively in this generation of tribal people, as a result of cumulative postcolonial stress and internalized emotional pain, the first generation of Native adult children of alcoholics is created within their children. This underlies a further fragmenting of the psyches of tribal people. In addition, the first generation of Native people with alcohol-related neurological deficits secondary to maternal alcohol (and drug) abuse during pregnancy is born. Thus, another generation is created of Native people with dysregulated arousal, reactive attachment, compromised behavioral immunity, alcohol-related neurological effects, sexual abuse, physical abuse, and experience of complicated and subtle oppression. The dynamics of racism and oppression are becoming quite sophisticated, and as a result young tribal people begin

internalizing that process and identifying with it as a self-image.

Implications for Research with Contemporary Tribal Communities

What are the issues of this generation of tribal people? Gangs and gang membership, alcohol, drugs, and the biased dominant culture child protection services and adoption. It is this generation of tribal people who may have a child of four years of age who is reported into the child protective service system because the parents are substance abusing. Substance abuse and parenting skills are an issue. But, this young tribal family is carrying a lot of weight from the past in the form of postcolonial stress effects and concurrent ongoing oppression. These young Natives might be contending with a gang membership issue, where it is dangerous for them to withdraw from the gang, but legally they must in order to retain their child. Their ability to parent might be compromised by needing to participate in a demanding temporary aid to needy families (TANF) system, while simultaneously completing an outpatient substance abuse treatment program that was never designed for Natives and is not a culturally appropriate route to abstinence and sobriety. These are the issues of the current First Nation generation in the U.S.A.: poverty, substance abuse, psychiatric disorders, oppressive political and racial systems and agenda, culturally inappropriate child protection efforts and treatment methods, and the cumulative effects of several generations of postcolonial stress.

For purposes of this paper, in which I am reviewing papers on research and program evaluation methodology in the tribal community, what is the value of discussing postcolonial stress and the cumulative effects of postcolonial stress? Well, if we are conducting research in the tribal communities, this generation of Natives is the research subjects. These are the people on whom we conduct research. So if we're thinking about disability, we need to think about the relationship between disabilities and psychiatric disorders and stress.

I think when we start to examine these issues as researchers and begin to think about our research subjects, the postcolonial issues become clearer. Researchers step into a Native family that's already carrying quite a psychological burden and say, "Hey, trust me. Throw yourself open for research. Let me interview you. Let me give you this questionnaire. Oh, don't worry. It won't hurt. It's for your own good. I'm here to help you." I'm not implying that researchers are not looking to help Native people, but I am saying that the tribal people whom researchers want to examine and to help are psychologically and emotionally carrying a large amount of cumulative history and the effects of their history into the research. I think that in order to do ethical and moral research in the First Nations community, we must be aware of the postcolonial stress impact as an issue for the tribal research participants.

How does research impact the First Nations community and tribal research participants? I saw discussing and using the participatory action research model as an opportunity to create a research guide, a postcolonial participatory action research model, that addresses postcolonial stresses in a positive manner by engaging in research that is perceived as needed by the tribal community and endorsed by the tribal community. Integration of the participatory action research model makes tribal people full partners in any research attempt that involves them. This participatory process gives tribal people the opportunity to set the agenda of research that affects them. I'm suggesting researchers take a hard look at what tribal people want to study and how they want to study it. That brings me to the following brief discussion of postcolonial participatory action research as a method.

Practical Perspective: Postcolonial Participatory Action Research

Fisher & Ball (2002a, 2002b) described participatory action research or collaborative community research as an ongoing process of interaction between the researcher and research subjects. The team of researchers and study subjects alternately thinks about and modifies the research process as they conduct the research (Brydon-Miller, 1997; Lewin, 1946; McTaggart, 1991; Whyte, Greenwood, & Lazes, 1989). Scientific principles are the basis of this research approach, but care and attention are given to the values and beliefs of the community and the ongoing involvement of community members in formulating and conducting the inquiry (Fisher & Ball, 2002a & b); Greenwood & Levin, 1998; Greenwood, Whyte, & Harkavy, 1993; Park, 1999). Obviously, this participatory action model of research is very sensitive to tribal community needs and agendas as it fully involves the tribe. Furthermore, the tribal community sets the research agenda and selects and prioritizes the issues for investigation (Fisher & Ball 2002a, 2002b). As Fisher and Ball point out, the participatory action research model allows for examination of Native strengths, versus deficits, and emphasizes the use of Native knowledge (retraditionalization) to address current issues. Effective inclusion of tribal members as research participants and effective participatory action research require specific processes. It is beyond the scope of this paper to expand on these processes in depth, but I will briefly describe Fisher and Ball's recommendations regarding participatory action research in the tribal community.

How Participatory Action Research Works in the Tribal Community

Fisher and Ball (2002a, 2002b) recommended five principles for participatory action research in the tribal community, that emerged from their shared project with a Native tribal Head Start program, entitled the Indian Family Wellness project (IFW). First, the tribe must have oversight of the project, this oversight consisting of three components: 1) tribal council resolutions, 2) tribal oversight committees, and 3) the development and implementation of a tribal research code. Second, this model advocates the training and employment of tribal members as project staff. Third, a tribal facilitator acts as a liaison between the project staff and the tribally appointed oversight committee(s). Fourth, and of greatest importance, is the use of culturally specific interventions (derived from tribal beliefs and values, not adapted from elsewhere) as the experimental variable(s). Fifth, alternative research methodologies, such as the multiple baseline approach advocated by Biglan (1995), are helpful because of small sample size. And finally, sixth, the potentially negative effects of assessment instruments must be considered before any assessments are used.

In the next section, I will review the papers presented and discussed at the AIRPEM Symposium.

Discussion of Postcolonial and Participatory Action Research In First Nations Research and Evaluation Projects

None of the papers reviewed in this critique explicitly used the construct of postcolonial stress in the critique or discussion of the research or evaluation. However, it was evident that the authors of all the papers recognized implicitly that postcolonial stress was an important issue, which must be taken into account during evaluation or research. Also, although the authors differed in the depth and focus of the attention that they paid to the issue of participatory action research, each paper also contained good descriptions of various aspects of this research and evaluation process. Next, I discuss the reviewed papers with respect to the criteria developed in the coding instrument (see Appendix C). The coding instrument was used to analyze the integration and use of postcolonial stress theory and participatory action research in the theoretical papers discussed in the following section.

Findings and Discussion

Hillabrant provided a strong discussion of the type of sponsors who provide funding and support for research in Indian Country and the stakeholders affected by research in Indian country. He emphasized that sponsors of research in the tribal communities have increased their solicitation of input from tribal organizations and tribes. Furthermore, many tribes have actively pursued more active involvement in the evaluation that affects them. Hillabrant pointed out that there is increased tribal control of the research approval process and use of tribally operated or sanctioned institutional review boards in reaction to a history of exclusion and exploitation of tribal people through research (postcolonialism). He reported on and recommended five key research processes that tribes are or should be requiring or implementing: 1) hiring tribal members as research assistants and data collectors; 2) clearly describing the beneficial impacts of research findings for tribes and tribal members; 3) adequately guaranteeing that the tribe and environment are not harmed by the research protocol; 4) absolutely guaranteeing tribal, community, family, and individual confidentiality and anonymity; and 5) requiring review and approval by tribal representatives of all results and findings. Finally, Hillabrant presented several vignettes regarding the ethical issues and dilemmas in Native research and the various specific factors in tribal communities that exacerbate them: lack of cultural competence, poverty, illness, and deficits in infrastructure.

I was pleased with Hillabrant's solid description of the scientific history of research in tribal communities, and by his focus on and description of the five key processes currently being required by tribes and tribal organizations, which closely parallel the postcolonial participatory action research recommendations. Finally, I believe that Hillabrant's concern with ethical problems was appropriate and is needed as a further focus in future discussions of tribal research and evaluation.

Davis and Keemer provided an excellent historical perspective of the potentially destructive nature of research in tribal communities. Their paper clearly and graphically delineated and described post-colonialism in research at its worst in the tribal communities. Next, Davis and Keemer mentioned a detailed example of the violation of trust and exploitation of tribal communities, in their description of the misused and harmful Barrow alcohol study. I applauded the next section of their paper. They described and recommended participatory research, including community ownership of the research process, tribal approval and oversight, awareness and sensitivity to cultural issues, the establishment of a tribal research code (and example of a research policy statement), obligations of the researcher, and community control of data and results. An example of participatory action research and collaboration between tribal grandmothers and researchers provided a good practical example. Four research codes (three formal and one informal) were briefly described and references and web sites to locate these research codes were provided. Finally, Davis and Keemer concluded that tribal people have begun and will continue to demand that research involving their communities be collaborative and participatory in nature. Several recommendations were provided: study service utilization rates, closely protect information gathered by tribal members used in data collection, focus new research on tribal and community strengths as well as on the commonly examined deficits, be aware that there is a great need for careful research in the Native community as we know little about tribal people in contrast with other populations.

I enjoyed the excellent history of postcolonial research and the potentially negative effects described by Davis and Keemer. The example of the Barrow alcohol study and effects was appropriate. The most important section of this paper was the set of recommendations briefly listed above. Clearly, further clear

recommendations into the uses and areas for research in the tribal community must be developed and discussed in articles following this piece.

Marshall, Johnson, Kendall, Busby, Schacht, and Hill provided a clear rationale of the need for specifically trained researchers to study disabilities in tribal communities. They openly articulate the need for cultural perspectives and awareness when examining Native individuals, families, communities, and systems. Furthermore, research design and implementation must occur within a cultural context that necessarily shapes the evaluation process. Marshall et al. plainly described and openly advocated a participatory action research model with a specific focus on securing the input of disabled persons (Consumer Concerns Method). Culturally specific sampling procedures within the community and relying on the community were described. Tribal members were used as data collectors and a Native was trained as coordinator for research supervisory purposes. Instrument and question development for the study involved a collaborative advisory committee of both service providers and consumers.

It was evident that collaborative relationships were required for representative sampling. This required tribal members as key collaborators: liaisons, guides, instructors, facilitators, and even friends. Collaboration underlay the development of trust, the two-way facilitation of accurate communication, and recruitment of a representative sample of participants. One lucid example of collaboration in the Eastern Band of Cherokee was provided and the author discussed the beneficial impact of participatory research on his career. It is critical that further research is conducted on the issues of Deaf Natives and several of the challenges to this research were delineated. It was proposed that researchers working with tribal communities can learn from the experiences of researchers working with other aboriginal populations worldwide. One particular group of people, the Australian Aborigines, has achieved a very carefully constructed and comprehensive set of guidelines for research into their community that might serve as a model for First Nations in America. Finally, it was recommended that no research be conducted outside of a deep understanding of the cultural context.

I was impressed by the commitment of Marshall et al. to collaboration within a cultural context that is defined by the tribal participants. Their call for equal partnership was important. I think the most critical part of the message that I derived from this paper is that disabilities research must be based within a participatory action research model that recognizes racial culture. Further, it must equally be based in a collaboration that recognizes that disability creates a subculture and that both racial and disability culture must be taken into account. One can not examine disabled people of any race or culture without having disabled collaborators and without making the assessment process reflective of the culture related to the specific disability.

Running Wolf, Soler, Manteuffel, Sondheimer, Santiago, and Erickson began by recognizing that the research and "psychological" paradigm itself is a construct largely based in western worldview and assumptions and often has little meaning in the tribal worldview. One aspect of this disparity is that often the term disability has a radically different meaning to tribal people than it does to researchers or interventionists. Running Wolf et al. pointed out that initially an understanding of what a family represented in the tribal communities was needed. Each of the eight tribal communities discussed created its own specific program in collaboration with the technical assistance offered by the granting agency. The challenge for Running Wolf et al. was to assess the eight widely differing tribal Circle of Care grant-based programs in a manner that would demonstrate their individual effectiveness and outcomes. This assessment was supposed to be conducted using a specific set of instruments (clinical measures) that had little reliability and validity

in tribal communities. As a result, each of the tribal grant communities modified the data collection methods to most closely reflect their needs. Several alternative methods were created and the federal government adopted a flexibility plan based on these methods, which allowed for further instrument development or creative use of the current instruments. Of note was the use of two primary methods, community-based advisory committees and collaborative skill-building relationships between community and evaluation team.

This paper established that comprehensive and culturally competent evaluation in tribal communities requires tribal community leadership and collaboration. It became clear that tribal communities were effective at identifying needs, determining a course of action, and taking needed steps to achieve their goals. Finally, federal recognition of the need for flexibility and collaboration allows for greater participatory action evaluation and research in the grant-based tribal Circles of Care in the future.

Running Wolf et al. faced a tremendous challenge in collaborating with the tribal communities in implementation of the federally mandated assessment methods and instruments, and an equal challenge in working with the government on these issues. What I liked was that this team facilitated a collaborative effort with the tribal organizations and that they further advocated for federal change and flexibility. It is important not only that researchers and tribes work together, but also that researchers with relationships to research sponsors seek to facilitate a greater collaboration among themselves, the First Nations, and the research sponsors. I was pleased that Running Wolf et al. reported progress in this direction.

Summary

The use of the postcolonial stress model and terminology was not explicitly evident in any of the papers reviewed. However, awareness of postcolonial stress and the issues of postcolonialism was apparent in these papers. Of greater importance, perhaps, was the clear sense of need for a participatory action research model that emerged from these documents. Each of the authors recognized and discussed the importance of tribal control of the research agenda and activities in Native communities. The requirement for researchers and community members to collaborate and that community members hold the lead in setting the research agenda was evident. The importance of cultural understanding and the use of a strong cultural basis (far more than adaptation of other perspectives and methods that have worked elsewhere) for the research and interventions was evident. Several specific recommendations for the research process were provided by these authors that were reflective of those mentioned as important in postcolonial participatory action research and thus included as coding instrument criteria (Fisher and Ball, 2002a & b).

Some questions remain for further discussion:

- Are the postcolonial stress model and terminology valid for discussing research and evaluation?
- If so, is it helpful to integrate the postcolonial stress model and terminology into discussions of research and evaluation?
- Should further work be conducted on integrating the postcolonial stress model into the participatory action research model?
- Should efforts be made to integrate the postcolonial stress model into understanding the experiences of other aboriginal cultures: Australian Aborigines, New Zealand Maori, Canadian Natives, or South African Blacks, for example?
- Is postcolonial stress a factor in disability?
- Is participatory action research a "better practice" for tribal communities?

These questions and others similar will form the basis of understanding the relationship between the theories used as a frame of reference to understand American Indian Research and Program Evaluation

Methodology. I hope that a further and deeper exploration of these two related themes, postcolonial stress and participatory action research, and of the topic of research and program evaluation in tribal communities continues in the future.

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