

ENRICHING PSYCHOLOGICAL RESEARCH ON DISABILITY

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The American Psychological Association (APA) was pleased to co-sponsor the conference, “Bridging Gaps: Refining the Disability Research Agenda for Rehabilitation and the Social Sciences,” held in May 2002. The conference re-invigorated the process of bridging the gaps between what is known and so much more that needs to be known in disability and rehabilitation: gaps between research and practical applications; gaps between quantitative research and experiential subjective research; gaps between the needs, values, perceptions, and resources of persons with disabilities, advocates, researchers, health and rehabilitation practitioners, educators, and government agencies. There is so much to be done, and this conference began to illuminate many promising paths to broadening the understanding of disability, setting new goals for rehabilitation, expanding consumer-directed services, and implementing policies that promote full participation among persons with disabilities.

APA has a proud history of addressing disability issues over the past 30 years. The APA governance, central office, Public Interest Directorate, the Committee on Disability Issues in Psychology, and the Division of Rehabilitation Psychology have been committed to integrate issues of disability into their research, practice, educational, and legislative agendas. In the last few years, the collaboration of APA and the National Institute on Disability and Rehabilitation Research (NIDRR) has begun to broaden perspectives on the meaning of disability and its many extensions both to new populations and new domains of application. I am pleased to report that there will soon be a special issue of the *American Psychologist* focusing on disability, rehabilitation, and NIDRR. Additionally, one of my recent presidential columns for the *APA Monitor* (October 2002) was devoted to what I have begun learning about disability.

That said, I must confess to not wanting to give the keynote address at the Bridging Gaps Conference when APA’s Director of Public Interest, Henry Tomes, tendered the invitation. My reticence was not from lack of interest, but lack of knowledge. How could I presume to be a keynote speaker, given that I don’t know anything about disability? I have never done research on the subject. I am not an expert in any area of disability or rehabilitation; therefore, it seemed fraudulent for me to talk to a room full of experts about future research needs. It seemed even more disrespectful to address the conference as little more than a superficial, APA-designated motivational leader, leading the audience in the chant, “Go Disability! With a D, with an I ...” However, my discomfort and concern provided me with an opportunity to remove my traditional paradigm blinders and reframe my conceptualization of disability.

The more I thought about the topic, the more I realized disability is not only about being blind or deaf or paralyzed, as I had mindlessly thought. It is also about transient, temporary, or partial impairments; a host of barriers to optimal functioning; and the social dynamics and life-course development of persons with disabilities interacting with their behavioral settings. These dynamic features of disability are, in turn, enmeshed in a complex

of overlapping spheres of community, culture, economics, politics, and even global interdependencies.

When considering disability from these perspectives, I realized that I might have something to say, some personal stories to share, some thoughts I have discovered in this awakening of my sensibilities, and some ideas for future research.

Personal Disability Experiences

Starting with the personal, I have had a disabling condition for most of the past decade due to a series of accidents requiring several knee and shoulder surgeries, from arthritic conditions requiring bionic dual hip replacements, from ruptured spinal disks, and from carpal tunnel syndrome that has required surgery. I have been continuing my life's work with the assistance of physical therapy, weekly massages, chiropractic treatments, regular epidural injections, and my trusty cane. Each one of these transient physical, structural problems affected my life in a variety of ways: dealing with chronic pain for years on end; taking medication that dulled my thinking at times; and experiencing medical visits, loss of some usual functions, downtime from career activities and goals, dependencies on assistance from others, and the inability to participate in all family and marital activities. I have, intermittently, feelings of frustration, inadequacy, depression, and anger instead of accomplishment, joy, and pride. In college, I was a track star, the anchor of the record-breaking mile relay team. Now, it takes me longer to struggle up one flight of stairs than it used to take me to run a quarter mile.

Then I recalled other personal links to disability. My younger brother, George, was diagnosed with infantile paralysis during the 1930's epidemic, and I felt compelled to fight other kids who called him names that were hurtful and derogatory while also encouraging him to do the Sister Kenny swimming treatment by going into the therapy pool with him.

My current student, H'Sien Haywood, who tutored me in preparation for delivering this keynote address, also taught me about the deeper meaning of resilience and patience that characterized her life. She had a spinal cord injury from an auto accident that resulted in paraplegia when she was 16 years old. She was just about to enjoy the freedom of driving, staying out late with friends, and participating in all of the activities of a young adult but was instead hospitalized for seven months and endured two years of therapy to be able to negotiate her newly restricted world in a wheelchair. She went from being a person who took only minutes to dress and shower each morning to requiring hours in the morning and night for these daily rituals, as is common for a person with a severe disability. But with tenacity and a sense of self-efficacy, H'Sien is now able to drive, take trips around the world, be a teaching assistant, and conduct original research on disability. H'Sien took advantage of her resources, including her desire to complete her goals, to model to the world that life is beautiful, both standing and sitting in a wheelchair.

My Revised Perspective on Disability

The basic lesson I have learned is that the boundary between abled and disabled is *permeable* and that we will all move across it throughout our lives for varying durations and with varying degrees of limitations on what we consider “normal” or usual functioning. As we move into or out of disability, we do not make that voyage alone but bring along a community of others who are affected in various ways by disability. The voyage occurs, of course, among the larger community having both accurate and stereotyped perceptions of disability, with ideals and norms about personal worth, societal contributions, social relationships, and individual potential.

In addition to the more apparent sensory and physical limitations, there are many other forms of disability and there are a variety of conditions that contribute to disability. Among them, we psychologists are aware of cognitive and learning disabilities, the enduring psychological impact and delayed socialization from neglect or early life abuse, and the often hidden disabilities of agoraphobia and anxiety disorders. Alzheimer’s disease, substance abuse and dependence, severe psychopathology, and irreversible neurological disorders from environmental toxins also are disabling. Obesity, which has become a national epidemic, according to the Surgeon General, shortens lives and is one of the most stigmatized forms of disability. In my view, a seriously neglected area of study is that of societal and environmental barriers to participation in life activities for persons with disabilities. Among the most pervasive of those barriers are prejudice and discrimination that prevent access to needed or desired resources and to available opportunities. Other negatively contributing conditions are a health care system that focuses on acute illness instead of long-term impairment, an educational system that has yet to fully accommodate children with disabilities, and most pervasively, the disabling consequences of extreme poverty that afflict millions in our nation and billions around the globe.

Why is it important to include disability issues in the study and practice of psychology? Disability is not the experience of a small minority of people. Rather, it is an experience that will touch most persons at some point during their lives, either due to a personal condition or that of a loved one. In a curious sense, it is like shyness, a topic that I have been studying for the past 30 years. Before my Stanford Shyness Project, no one had ever systematically examined adult shyness, assuming it was a debilitating but transient condition limited to childhood and adolescence. We found that this assumption was patently wrong. In our surveys of more than 10,000 people worldwide, shyness is a common feature of most people’s life. About 40% of those asked reported being currently shy, another 40% indicated they used to be shy but have outgrown it, and 15% are situationally shy, made socially anxious by certain threatening settings. If you add up the numbers, it is the “Not Shy” extroverts in the minority, with only about 5% having no personal direct shyness experience. But even that slim percentage shrinks when they consider close friends and family members who are shy (Zimbardo, 1977, 1991). The same is true of disability. The extent of the any given identifiable disability may not be the same as shyness, but the nature of the social spread is similar.

I have also learned that there are over 54 million Americans with disabilities, a full 20 percent of the U.S. population. Almost half of these individuals have a severe disability, affecting their ability to see, hear, walk, or perform other basic functions of life. In addition, there are over 25 million family caregivers and millions more who provide aid and assistance to people with disabilities. The numbers for spinal cord injuries alone are staggering: more than 250,000 persons with spinal cord injuries are now living in the United States; another person will join their ranks every hour of every day (Palmer, Kriegsman, & Palmer, 2000). Due to post World War II advances in life expectancy and survivorship, persons living with disabilities, regardless of which definition is used, now comprise the single largest minority group ever identified in the United States. It is evident that disability is an “equal opportunity minority.”

Many of the physical needs and psychological realities of persons with disabilities also apply to those who are overweight, elderly, in recovery from addiction, pregnant, or caring for young children (e.g., the need for ramps, elevators, and closer parking spaces). And to some extent, those adults who are illiterate also experience the frustrations and limitations of disability.

On the horizon are the anticipated effects of the aging of the “baby boomer” generation that will result in unprecedented numbers of people with disabilities. According to the new National Coalition on Disability and Aging, there are approximately 75 to 85 million Americans—or one-third of the nation—who are aging with long-term disabilities or aging into disability for the first time in later life (Campbell, 1996). Moreover, as the population ages, more Americans will have illnesses and chronic conditions. With a current life expectancy of 75 years, newborns can expect to experience an average of 13 years with an activity limitation. Because the 85 and older group is the fastest growing segment of the population, many Americans may live with activity limitations for 20 years or more (CBS HealthWatch, 1999).

A little discussed population are the many prisoners who are filling our prisons in unprecedented numbers, many on “Three-Strikes Laws” that put them in prison for 25 years to life. They will be a unique aging group, requiring care not available in most prisons. The costs of providing the needed health care to this population may be as high as a million dollars per inmate over 25 years (Zimbardo, 1994). Despite the astronomical costs, can we afford not to give the needed care? As an aside, many paroled inmates face a harsh world with little chance of a good job, housing or health care; they become societally disabled after having served their sentences and never are quite able to fit back in. No wonder that recidivism rates after three years are well over 60%.

The demographics are weighing heavily toward increased numbers of persons with disabilities in coming years. In addition to a graying population in the U.S. and many other countries, there is an increase in people who are socially isolated: adults living alone, single parent families, single child families, declining extended family networks, negative population ratios in an increasing number of countries, and high residential mobility (Putnam, 2000). Packaged together, these trends lead me to pose two questions: “How will

society be able to care for this sizable population of people with age-related disabilities?” and “Who will be there to care for the disabled elderly in the coming generations?”

The limitations on what we can do—limitations from realizing our fullest potential—can come from our bodies or our minds, from external barriers, environmental assaults, or imposed constraints on our freedom of action.

As psychology has moved to be a health discipline, we have become more sensitive to the reality that physical disabilities can have psychological correspondences, and extreme psychological disorders typically affect physical functioning (a few examples are substance abuse and dependence, somatoform disorders, asthmatic problems, coronary and stroke). A survey of California mental hospitals found that a fourth of all persons institutionalized because of psychiatric disabilities had undetected physical illnesses, some of which could be causing their mental disorders (Koran, et al., 1989). The mind and body do not perform in solo fashion; they are synchronized in the dance of life like well-practiced tango partners.

This synchronization came clear in my research on the social effects of deafness. My research team and I found that people who had experienced hearing impairments over time would often experience and demonstrate symptoms of paranoia, including suspiciousness, anger, and hostility (Zimbardo, Andersen, & Kabat, 1981).

What we are learning is that undetected hearing loss among the elderly may lead to the development of social confrontations that can eventuate in paranoid beliefs by falsely assuming that the perceived discontinuity is in the social environment rather than a personal, organic problem. I tested this hypothesis in a controlled experiment with young, healthy, normal college students. Using hypnosis to create hearing deficits with and without awareness of their source and confederates to create a social scenario that could be misinterpreted as one of humiliation and rejection, the stage was set to reveal that paranoia is a social disease. The experiment had a startlingly strong effect. In only 30 minutes, these intelligent college students began behaving in paranoid ways as measured both by standard clinical assessments and by observer ratings—only if they had induced deafness without source awareness (Zimbardo, 1999).

Psychology Paradigms of Potential Value for Disability Research

I would like to outline five general paradigms in psychology that I believe could be useful for researchers in disability and rehabilitation.

- **Social Psychology.** As a social psychologist, I want to note a parallel between our basic paradigm and that recently adopted by the National Institute on Disability and Rehabilitation Research (NIDRR), disability researchers, and those in rehabilitation. Social psychology has always differed from mainstream psychology by asserting that despite psychology’s focus on the *individual’s* mental and behavioral functioning, the *behavioral context* matters and the cultural background of individuals and groups also matter. What we do or don’t do and how and what we think are dependent on more

than what any individual brings into a setting; they also depend on what environmental settings bring out of the individual (Lemert, 1962).

Research in social psychology on the “power of the situation” over individual dispositions has been dramatically illustrated in Stanley Milgram’s (1974) blind obedience to authority studies and my Stanford Prison Experiment (Zimbardo, Haney, Banks, & Jaffe, 1973). These and many other studies highlight what has come to be termed “the Fundamental Attribution Error.” Coming from a culture where individualism rules, we all tend to show the dual biases of overestimating the power within individuals to control behavioral outcomes, while underestimating the power that external social situations can exert over individual dispositions. For social psychologists, individuals interact with situations and the conceptual analysis of situations has been expanded to include cultural, historical, and political settings that surround the immediate behavioral setting.

There is an affinity between the basic approach of social psychology and the recent paradigm shift of disability as a dynamic interplay of characteristics of individuals and their natural, built, and social environments. However, we also have to recognize that this ongoing transaction is a developmental process that changes over time as the person copes with the barriers and challenges of disability, learns new modes of responding, uses assistive technologies, deals with accessible and inaccessible environments, and negotiates social settings that provide support at times and stigma at other times. I believe social psychology can inform research on disability, and social psychology is one place I encourage you to seek prospective research collaborators who share this paradigmatic view.

- **Life Course Developmental Psychology.** Another traditional area of psychology with an affinity to disability is developmental psychology. This area, which used to be called “child psychology,” has now been transformed into Life Course Development, stressing the continuities in multiple, interacting processes over the course of each person’s life. Research in aging has changed from a traditional focus on documenting the deficits associated with aging to discovering the conditions that promote “successful aging” to uncovering the mechanisms that contribute to life long growth, wisdom, and a sense of generativity (Baltes & Staudinger, 1993). This new focus has attracted new researchers and also new foundation funding. The same change will occur in disability with the increased emphasis on the positive aspects of the disablement-ablement continuum.
- **Behavioral Gerontology.** Despite increasing prevalence of older people with disabilities, little research exists describing the natural history of aging with physical disability. In fact, data on aging are typically missing from most empirical studies of life long disability. At a theoretical level, we need more knowledge of the changing nature and meaning of disability at different stages of the life course and across different social contexts. Research regarding the cognitive and emotional impact of disability across the lifespan will lead to greater understanding of human behavior in

its entirety. Again, the applicable paradigms exist in the relatively new field of behavioral gerontology.

- **Cultural Psychology.** A paradigm change in psychology has been responsible for the emergence of an exciting new area of research, that of cultural psychology. Previously, those interested in understanding the effects of culture on mental and behavioral processes used the anthropological model of investigators living in “foreign cultures” and making comparisons across cultures. But few graduate students could afford the time and could not readily obtain the travel grants. Now United States researchers collaborate with psychologists from cultures that pose interesting conceptual comparisons to investigate. Each is an expert on her or his culture and together they explore hypotheses about how basic human processes are similar or different across these cultures. A prime example is the research on the nature of the self in Japan and the United States by my colleagues Hazel Markus and Shinobu Kitayama from Kyoto (Markus & Kitayama, 1991). Now graduate students can also do such collaborative research without leaving home, and indeed dissertations on cultural psychology are bursting out everywhere. It is essential to have paradigms and methods that graduate students can embrace for any field to attract the best and brightest who come with fresh, innovative ideas to add to those of their seasoned elders. For an exciting view of this new field rich with challenges, see the program I developed for PBS, “Cultural Psychology,” *Discovering Psychology*, Updated Edition, 2001, (<http://www.learner.org>).
- **Positive Psychology.** Former APA president Marty Seligman has championed a new vision for psychology: a major paradigm shift, away from the medical model of illnesses characterized by deficiencies and deficits that have dominated psychiatry and clinical psychology. In its place is a positive psychology that extols and celebrates human strengths, virtues, and talents (Seligman, 2002). He and his colleagues will soon publish the “UN-DSM,” the catalogue documenting and diagnosing all human strengths, talents and virtues, along with research guidelines and treatments to nourish them (Peterson & Seligman, in press).

Similarly, Steven Tingus, NIDRR Director, has noted that NIDRR has moved away from its earlier reliance on the medical model and toward a comprehensive health-wellness-enablement model. To translate that vision into practice will require more than asserting it; it will require developing strategies for attitude and value change within the general society, among relevant professionals, legislators, and all those addressing disability issues. To that end, effective media campaigns are essential to effect this positive reframing.

Disability advocates and psychologists should consider joining forces to call for adding positive reframing to the research and policy agendas. It is still necessary to present the case for resources needed to improve quality of life for people with disabilities to increase governmental funding, to increase inclusion in insurance programs, and to facilitate development of assistive technologies and environmental policies. At the same time, it is vital to provide a positive model for those individuals

with disabilities, their support network, and the public. It is time to move beyond the disabling model by expanding the concept of disability to include broader influences that are challenging rather than limiting and to add a new dimension to the concept of diversity.

The Media as Gatekeeper to Public Attitudes

Since September 11, our nation has been focusing on the concept of resilience of those who overcame the traumatic experience of the terrorist attacks to be stronger and with a renewed commitment to life. Like my student, H'Sien Haywood, untold numbers of people with disabilities live lives filled with optimism, purpose, joy in the moment and in personal relationships despite the daily barriers to programs, places, and opportunities that are available to others. Often, people with disabilities model resilience at an extraordinary level. Why are their stories not part of media story-telling about Americans?

The media should be given opportunities to examine the lives of ordinary folks dealing effectively with disability to enlighten the public. NIDRR and APA should work together to generate more local network programming to change attitudes of the public by documenting the lives of people with disabilities and how they cope with the daily barriers of an inaccessible society. We could promote the idea of new media about the challenges facing persons with various disabilities and their resilience, often heroic in proportion. There could be high school and college student media contests to support the development of advertising campaigns and short film/video documentaries on disability. The media venues could be accompanied by research projects to assess changes in attitudes toward people with disabilities from before to after viewing.

Five Research Ideas to Consider

- Research by my colleague in **Life Course Development**, Laura Carstensen, has shown that as we age, we don't do less because of inability but because we choose selective optimization of activities and social choices to elect to spend more time doing what we enjoy and more intensely with fewer people we enjoy. We conserve our emotional expression; we show better emotional regulation as we age (Carstensen, Isaacowitz & Turk-Charles, 1999).

Carstensen's socio-emotional selectivity theory contends that as we age and recognize time constraints imposed by mortality, our goals change so as to motivate us toward focusing on the more emotionally salient aspects of current life. A recent study with young persons with spinal cord injury revealed a similar process at work but not due to concerns about mortality. Compared to "able-bodied" controls, these SCI participants remembered more positive task pictures and fewer negative ones. This result suggests that emotion regulation goals become more salient due to life circumstances that prime the fragility of life and not only its looming termination. (Haywood, Mather, Turk-Charles, & Carstensen, in press). Here is a case of research that extends a general psychological theory in interesting ways by understanding a functional dynamic of those experiencing disability.

- **Transformative Power of Human Touch.** I would like to see more research on the effects of touch on rehabilitation, on emotional maintenance, and general functioning of those with various disabilities. Researcher Tiffany Field and her colleagues (Field, Schanberg, Scafidi, Bauer, Vega-Lahr, & Garcia, 1986) have shown that brief daily massages of premature infants for 15 minutes, three times a day, caused a gain of 47% more weight, and their rapid growth resulted in an average of 6 days earlier release from intensive care hospital units and an estimated savings of \$5 billion annually for the 470,000 premature infants in the United States alone.

Failure of touch is one of the causes of marasmus or hospitalism, the phenomenon of fed children withering away, dying in foundling homes and orphanages in the United States and England in the past and more recently in Romania.

What is the power of touch for those with newly acquired disabilities? Does it differ with age or cultural background? If proven to make a significant difference, it is a cost-effective adjunct to other treatments for people with disabilities. We also need to study the cultural resistance in America to touching and being touched by caregivers and even family.

- **Learning to Ask for Help.** I would like to see social research on the effects of teaching those with disabilities how to ask for help; the virtues of social dependence; lowering barriers to communicating with family, friends, coworkers, and strangers, and the need for specific or general help. This is a problem shy people in our shyness clinic experience all the time, and we develop experiential role-playing exercises that move them toward increased comfort with asking for help. Such an issue combines research, education, and treatment. Conversely, the research may also study the skills, traits, and tendencies of persons with disabilities who are able to utilize the resources of assistants effectively and seamlessly.
- **Self-Efficacy Training.** Another of my colleagues, Albert Bandura, has shown that often “the frame is more valuable than the picture.” His extensive research on self-efficacy leaves no doubt that believing in one’s ability to achieve specific goals is critical to successful performance in many domains. With comparable ability, those with a stronger sense of self-efficacy succeed more often because they persist longer despite adversity and setbacks, and they may even lack external social support. Bandura (1997) also demonstrated that there can be “communal efficacy” of a group of people believing in the effectiveness of their group’s power. This paradigm should be adapted for research on disability, and I feel confident it could reap significant benefits. It seems essential to rehabilitation to promote a sense of mastery in clients, starting with the most minimal activity the person can perform and then building a systematic network of more advanced tasks as successive accomplishments. Believing you can is the first step toward discovering you can.
- **Psychology of Time Perspective.** I have been studying the psychology of time perspective for many years and think it is an area that could be enriched by inclusion

of disability thinking (Zimbardo & Boyd, 1999). Time perspective is one of the subjective or psychological aspects of time in contrast to objective or clock time. Other aspects of time are perceived duration or speed of events and sense of pace of life. Time perspective develops from the way we partition the flow of our personal experiences into temporal zones. Usually the obvious zones are past, present, and future, but not always for all individuals or societies. A variety of influences operate on us to over-emphasize one zone and underemphasize another. These cognitive biases develop as a function of social class, religion, culture, education, and family modeling, among a host of contributing influences. We have developed a simple assessment device (The Zimbardo Time Perspective Inventory) that identifies temporal profiles of individuals into the factorial categories of Future, Present-Hedonism, Present-Fatalism, Past-Positive, and Past-Negative.

A growing body of research from our laboratory and others indicates that this is one of the most powerful and least recognized influences on how we think, feel, and act. The major and minor decisions we make daily that shape the course of our lives are all constrained or enriched by our time perspective. For some, the decision to take a given action is entirely supported by the physical, sensory qualities of the stimulus, along with the social context and one biological state—they are the present-oriented. Others facing the same decision suppress those immediate situational demands and refer back in time to similar situations and rely on their memory of relevant outcomes and promises, commitments, and obligations—they are the past-oriented. Still others, and more common among academics, deal with the decisional task as a cost-benefit equation, weighting anticipated gains against expected losses—they are the future-oriented. Of course, we are not rigid types, but the biases we develop tend to make us over-rely on a focus on today, yesterday, or tomorrow. Clearly some who are past-oriented have had pleasurable past histories to rely on, to reminisce about while others have had more traumatic, aversive past experiences. Present-orientation can be filled with the focus on hedonistic pleasures of the moment or with a focus on the present as a default condition since their future is not under their control, but rather controlled by fate, luck, and external agency. Even with this cursory overview, it should be apparent that knowing a client's time perspective profile should enhance her or his treatment protocol in rehabilitation.

I argue that the ideal time perspective is one that balances moderate levels of future and present hedonism with a healthy dose of past-positive. In contrast, all of our research reveals that being past-negative or present-fatalistic is predictive of negative outcomes, anxiety, depression, anger, and unhappiness, even among fully functioning college students. Those who focus on the negative aspects of the past or are present fatalistic, experience stresses and trauma more intensely, recover less well, and recycle negatively over time—they get worse with the passage of time by ruminating about the negatives in their lives or the impossibility of improving their condition.

We could benefit from new research exploring time perspectives of persons with various disabilities at different ages and then explore how time perspective profiles change over the course of rehabilitation. More proactively, I believe that

rehabilitation efforts will be most efficacious with those who have a future orientation or in whom we can induce a greater sense of positive future focus. How is it possible to do rehabilitative training without inducing the psychological state of hope (Snyder, 1994)? It seems to me that trainers, counselors, and family support aides must induce the belief that hard work, and sometimes pain and suffering now, will have a positive payoff at some future time. Why else would any person with an injury, disease, or impairment suffer through weeks, months, or years of therapy that is often painful and which typically has little immediate obvious gain? It seems reasonable to believe that rehabilitation training might be enhanced by combining training in building future imagined scenarios into the treatment protocol. There must be a sense of hope that today's suffering and the pain from some exercises and physical therapy will pay off tomorrow. Perseverance is the key to success in any program of change, and that demands goal setting, sub-goals, and establishing means to move ahead from the "concrete here" to the "probable there." Those who focus on the present will experience greater pain and more intense negative emotions than will those who can be made to focus on imagined selves successfully overcoming obstacles and leading a fuller, richer life at some point in the future, eschewing certainty for probable success.

In a similar vein, I would like to see research relating post-traumatic "growth" concepts to time perspective and disability in order to answer questions such as, under what conditions does experiencing trauma result in healthy, positive adaptations, for what kinds of people, at what life stages? From this perspective it seems reasonable to look at the ways that trauma may create conditions that foster coping and personal growth (Tedeschi & Calhoun, 1995). Rather than being a universally negative experience, trauma, like aging, may deepen individuals' understanding of life and be interpreted positively, especially with expert therapeutic guidance. Thus, reports of increased depression and greater awareness of death do not necessarily contradict reports of increased appreciation of life. Rather, mature schemas may be more complex and contain multiple, once seemingly exclusive, views simultaneously. Indeed, research on the complexity of schemas suggests that mature schemas are more complex than immature schemas. Likewise, this product of post-traumatic growth is a newfound wisdom, one that has been described as an appreciation for paradox (Linville, 1982, 1987).

Conclusion

There are many domains in which research psychology and educational psychology may contribute to a fuller appreciation of the complexity and richness that are embodied by the disability experience. As researchers and practitioners in disability and rehabilitation expand their perspectives to include the behavioral, social, and environmental context of the person with a disability, they become aligned with many psychologists with whom they might begin to work collaboratively. Similarly, as researchers in other areas of psychology become aware of the many fascinating issues surrounding disability research and rehabilitation practice, there could be a synergistic union of their talents and methods. Working collaboratively, we can also further increase the public's awareness of the breadth and depth of the disability experience. I could not be happier about overcoming my

reluctance to present the keynote address because I have learned so much that will make me a better psychologist and a better person now deeply concerned about including all those with any disability within the caring human community.

References

- Baltes, P. B., & Staudinger, U. M. (1993). The search for a psychology of wisdom. *Current Directions in Psychological Science*, 2, 75-80.
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: Freeman.
- Campbell, M. L. (1996). A life course perspective: Aging with long-term disability. *Maximizing Human Potential* (Quarterly Newsletter of the Aging, Disability and Rehabilitation Network of the American Society on Aging), 1(3), 1-2.
- Carstensen, L. L., Isaacowitz, D. M., & Turk-Charles, S. (1999). Taking time seriously: A theory of socioemotional selectivity. *American Psychologist*, 54, 165-181.
- CBS HealthWatch (1999). Older and younger people with disabilities: Improving chronic care throughout the life span. *CBS HealthWatch by Medscape* [Online]. Available: <http://www.cbsnews.com/sections/home/main100.shtml>
- Field, T., Schanberg, S. M., Scafidi, F., Bauer, C. R., Vega-Lahr, N., & Garcia, R. (1986). Tactile/kinesthetic stimulation effects on perform neonates. *Pediatrics*, 77, 654-658.
- Haywood, H., Mather, M., Turk-Charles, S. & Carstensen, L. L. (in press). Memory for emotional pictures: A socioemotional comparison of young spinal cord injured and abled bodied adults.
- Koran, L. M., Sox, H. C., Marton, K. I., Moltzen, S., Sox, C. H., Kramaer, H. C., et al. (1989). Medical evaluation of psychiatric patients. *Archives of General Psychiatry*, 46, 733-740.
- Lemert, E. M. (1962). Paranoia and the dynamics of exclusion. *Sociometry*, 25, 2-20.
- Linville, P. W. (1982). The complexity-extremity effect and age-based stereotyping. *Journal of Personality & Social Psychology*, 42, 193-211.
- Linville, P. W. (1987). Self-complexity as a cognitive buffer against stress-related illness and depression. *Journal of Personality & Social Psychology*, 52, 663-676.
- Markus, H. R., & Kitayama, S. (1991). Culture and the self: Implications for cognition, emotion, and motivation. *Psychological Review*, 98, 224-253.
- Milgram, S. (1974). *Blind obedience to authority*. New York: Harper & Row.

- Palmer, S., Kriegsman, K. H., & Palmer, J. B. (2000). *Spinal cord injury: A guide for living*. Baltimore, MD: Johns Hopkins University Press.
- Peterson, C., & Seligman, M. (in press). *VIA classification of strengths and virtues*. Boston: Oxford University Press and American Psychological Association Press.
- Putnam, R. D. (2000). *Bowling alone: The collapse and revival of American community*. New York: Simon & Schuster.
- Seligman, M. E. P. (2002). *Authentic happiness: Using the new positive psychology to realize your potential for lasting fulfillment*. New York: Free Press.
- Snyder, C.R. (1994). *The psychology of hope*. New York: Simon & Schuster.
- Tedeschi, R. G., & Calhoun, L. G. (1995). *Trauma and transformation: Growing in the aftermath of suffering*. Thousand Oaks, CA: Sage.
- Zimbardo, P. G. (1977). *Shyness: What it is, what to do about it?* Reading, MA: Addison Wesley.
- Zimbardo, P. G. (1994). *Transforming California's prisons into expensive old age homes for felons: Enormous hidden costs and consequences for California's taxpayers*. San Francisco, CA: The Center on Juvenile and Criminal Justice.
- Zimbardo, P. G. (1999). Discontinuity theory: Cognitive and social searches for rationality and normality - may lead to madness. In M. P. Zanna (Ed.), *Advances in experimental social psychology*, (Vol. 31, pp. 345-486). San Diego, CA: Academic Press.
- Zimbardo, P. G. (2002, October). Rediscovering disability. *Monitor on Psychology*, 33(9), 9.
- Zimbardo, P. G., Andersen, S. M., & Kabat, L. G. (1981). Induced hearing deficit generates experimental paranoia. *Science*, 212, 1529-1531.
- Zimbardo, P. G., & Boyd, J. N. (1999). Putting time in perspective: A valid, reliable individual-differences metric. *Journal of Personality and Social Psychology*, 77, 1271-1288.
- Zimbardo, P. G., Haney, C., Banks, W. C., & Jaffe, D. (1973, April 8). The mind is a formidable jailer: A Pirandellian prison. *The New York Times Magazine*, Section 6, p. 38.