DISABILITY, DYSFUNCTION, OR DECEPTION:
Explaining Acquired Occupational Disability

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Abstract

Acquired disability following trauma is an area that is in dire need of discussion and explanation. Unless an expert is fully informed of the multitude of pre- and post-injury medical and psychosocial dynamics that surround an individual's claim of occupational disability, he or she may not be in a position to make absolute judgments regarding residual employability, pre- and post-work capacity, or the causal attribution of vocational disability. Causal attribution is critical in determining disability chronicity following trauma, as the host of contributing psychosocial dynamics effecting unproductive states are often overlooked when investigating the most obvious reason for work absence, a so-called explanatory event. A thorough and accurate history-taking is necessary when assessing pre-injury work longevity, determining residual employability, and causally ascribing occupational disability to a particular event. Acquiring a complete and reliable history through various sources places the expert in a better position to offer a professionally certain opinion.

Key Words: medical impairment, occupational disability, attribution theory, disability proneness, work perception

Background

Central to most personal-injury lawsuits are the issues of vocational disability and lost earning capacity. When injured people begin losing time from work, they inevitably attribute the vocational disability to the most recognizable event preceding the unemployment—the accident. In a purely temporal analysis, most observers would agree with the injured party. That is, a documented event or accident took place and caused subsequent lost time. However, *post hoc, ergo propter hoc* (after this, therefore on account of it) is frequently a fallacy and too often constitutes a failure in the cause-and-effect analysis of vocational disability. The way acquired disability is explained can affect how chronic it might become.

Confusion exists in our medical and legal systems as to who is best qualified to describe vocational capability and disability and delineate the various factors to which occupational disability might be accurately ascribed. Thus, not only does acquired disability have a personal meaning to be explained by the individual, but also a larger social context in which professionals attempt to determine who is vocationally disabled and why. This article will reflect on who is best qualified to professionally describe occupational disability

and its causes.

Over the past 25 years thousands of injured people have been examined to determine vocational rehabilitation. Vocational disability is as much a function of psychosocial dynamics as medical impairment and resultant functional limitations. When an individual considers not only a medical impairment, but also the constellation of psychological and social forces that are at play both before and after an accident (and work injury in particular), he or she generally comes closer to defining the true cause-and-effect of lost productivity that may occur following an industrial accident or injury. Also, thorough and detailed history-taking is the key element in the skilled assessment of vocational disability.

Multiple Factors in Disability Analysis

It has been our experience that in the disability equation, one needs to account for the following:

- Worker's general health preceding the event in question.
- Work conditions preceding and at the time of the event at issue.
- Employer-employee relationship.
- Employee's self-esteem and psychological strength.
- Psychosocial factors outside of the workplace.
- Social-economic alternatives to remaining productive.

Each of these factors influences the lost-time analysis.

Worker Health and Wellness. Minds and bodies are the vehicles that collectively fuel productivity at both the individual and the organizational level. When mental and physical abilities are not maintained with proper health practices, they naturally deteriorate, and under stress these vehicles can actually break down. Some organizations have started to recognize the importance of health and wellness among their worker populations. The institutionalization of prevention and early intervention includes such initiatives as smoking cessation plans, obesity reduction plans, employee assistance programs, and exercise facilities available to all workers in particular companies; however, these types of programs are neither universally available nor commonly accepted as means by which employees can remain healthy and productive.

The degenerating musculoskeletal system, an unavoidable aging phenomenon, eventually becomes prone to injury and disability, particularly in industrial settings. Workplace mortality rates for longshoremen, transportation workers, and steelworkers, for example, are generally higher than those for accountants, lawyers, and schoolteachers, although more sedentary employees are by no means immune to mental stressors that can precipitate occupational illnesses. Without a focus on worker health and wellness, aging employees within an organization can become susceptible to lost time not as a result of a particular event, but as a result of the degenerative process that makes any body and/or mind vulnerable to occupational stress.

Working Conditions. Workplaces are not always conducive to employee health and wellness regardless of the efforts of human resources managers and others in leadership positions. Many industrial plants are more like dungeons than production facilities. Workers can encounter hazardous chemical exposures, run antiquated and dangerous machinery, and function in generally unsafe working conditions,

whether in non-unionized or unionized workplaces. Not infrequently, employees who recognize unacceptable conditions surrounding them initiate workers' compensation claims and associated lost time because the existence of such environments becomes intolerable—particularly as the workers age and eventually perceive no other exit strategy.

Several years ago, upon considering the issues of worker health, working conditions, and the employer-employee relationship, the metaphor of a *"toxic tort"* was coined to represent some workers' compensation claims. That is, in some instances, workers filed claims not because they had been injured or become ill, but because they considered the occupational environment so potentially harmful or "poisonous," literally and/or figuratively, that filing a compensation claim was a preferred means of economic survival.

Employer-Employee Relationship. Everyone who toils under supervision has perceptions of leadership, sometimes good, frequently bad. The relationship between the boss and the subordinate has received more attention than any other relationship in books on management, and no relationship has received greater scrutiny in labor-management agreements. The employer-employee relationship is invariably susceptible to conflict. Unresolved conflict is often the precipitator of workplace stress, tension buildups, and resultant lost time.

Employee Self-Esteem and Psychological Strength. When an individual experiences a sense of self-worth and realizes personal power, he or she is able to be assertive and make his or her needs known to others. Personal power is the goal for most individuals, but unfortunately, many people have not been afforded the building blocks necessary to develop a strong sense of self and self-worth. Criticized and invalidated by significant others in their early lives, most individuals become workers with tenuous egos and defensive self-concepts, more often focusing on what they do not want to happen to them rather than helping create the environments and relationships they desire. Personal power in the workplace can be diminished by performance circumstances and/or low productivity. When this happens, individuals can become susceptible to workplace injury and/or illness.

With reduced productivity concomitant to lowered self-esteem, an employee may find it easier to leave the workplace with a face-saving injury or illness rather than confront the actual problems that led to feeling helpless and depressed in a work environment that seems to lack compassion, understanding, and support. Feeling abandoned in a group of your workplace peers is far more anxiety provoking than becoming absent from work after the onset of injury or illness. The latter clearly vindicates the "honorably" disabled employee who, in his or her mind, has sacrificed personal health and well-being for the company.

Psychosocial Factors External to Work. Everyone experiences social demands and psychological pressures outside of work. When those pressures and demands exceed our tolerance for stress, we are susceptible to illness and/or injury. Disability proneness is a concept built on the idea that certain individuals are more vulnerable than others to the customary pressures of life outside of work. Personal and financial changes and losses such as relocation, separation/divorce, and other situations that are difficult to adjust to can lead to maladaptive behaviors affecting job performance and even work attendance. Experience has shown that individuals with inordinate psychosocial stressors and limited coping skills may very well be prone to disability. Moreover, the literature on work dysfunction reveals that certain personality types interacting with social and occupational demands are more likely to succumb to these pressures, learn helplessness, and claim vocational disability.

Social-Economic Alternatives to Remaining Productive. For years, experts have recognized that a construct parallel to learned helplessness is the phenomenon known as learned laziness. Once deemed the welfare pigeon paradigm, learned laziness is the expectation that certain individuals and personality types will quickly abandon motivational achievement behaviors for non-conditional rewards, sometimes in the form of workers' compensation indemnity benefits and/or Social Security Disability Insurance. With most benefits (e.g., workers' compensation and/or long-term disability) paying at rates of at least 66.6% of the employee's pre-accident wages, once-productive workers soon find it difficult to risk losing benefits by returning to the unknown consequences of gainful activity, particularly in an environment that may no longer welcome them. Often employers perceive injured workers with mistrust, and too often employers treat injured employees as damaged goods, or worse, as pariahs. With perceived employer disdain following occupational injury and/or disease, the injured worker quickly searches for alternative methods of financial survival.

There is much at stake when an individual claims to be vocationally disabled following accident and/or injury. There are various ways of explaining how an individual's disability occurred and why it might become chronic, but in all cases, regardless of the explanation, the nonproductive consequence of people being displaced from work following an accident and/or injury is very expensive to individuals, companies, and our nation's economy in general.

The Mercer Human Resources Consulting and Marsh, Inc., *2002 Survey of Employers' Time-Off and Disability Programs* revealed that time-off and disability program costs averaged 15% of payroll in 2001. More specifically, for an employee earning $40,000 annually, companies surveyed paid $6,000 for time away from work associated with sick days, workers' compensation costs, short- and long-term disability programs, salary continuation programs, etc. For years, so-called acquired occupational disability, an inability to work following injury or illness, has cost our economy billions of dollars each year ($170.9 billion, according to one 2002 estimate), and yet little attention has been given to the concept of how individuals explain vocational disability.

Causal Attributions of Occupational Disability

Attribution theory seeks to understand how individuals interpret events and how explanatory thinking and behavior tends to correlate with human motivation. Attribution theory considers how people

make sense of their worlds and what cause-and-effect inferences they make about the behaviors of themselves and others. For years the potential role of attribution theory in the cause-and-effect beliefs that people create and maintain when they acquire vocational disability has been explored. It has been postulated that healthcare providers, specifically physicians, trained in assessing impairment are generally ill equipped to determine the cause of disability in others. The authors of this article have hypothesized that vocational disability tends to be temporary or become fixed depending on an individual's attributional style. This article will again review the difference between medical impairment and vocational disability and discuss the multitude of issues surrounding causal attribution of occupational disability.

Medical Impairment v. Occupational Disability. Medical impairment, an alteration of an individual's health status, is what is wrong with a body part or organ system and its functioning (American Medical Association, 1990). Permanent impairment should be determined only at the end of the normally accepted healing period or when maximum medical improvement has occurred. Impairment does not determine the impact on the person's capacity to meet social or occupational demands; disability defines the impact of impairment on occupational functioning. Medical impairment is evaluated and treated by healthcare personnel. Disability is assessed by non-medical means, generally by vocational experts and disability evaluators. What causes occupational disability is often more complex than simply a decrease in physical or mental functioning secondary to a particular impairment.

Occupational disability is often caused by pre-existing medical problems, social dynamics, psychological issues, the lack of work skills that might be utilized in alternative or perhaps less demanding work, and/or economic factors such as the availability of appropriate employment given a medically impaired individual's residual employability. Nonetheless, how people explain acquired disability is very much a function of the attributions they create.

Attribution Theory. Attribution theory, what Weiner (1986) called naïve psychology—the cause-and-effect analysis of behavior made by the person-in-the-street—attempts to explain the mechanisms by which people construe the causes of behavior and arrive at their beliefs about success and failure. Attribution theory has been linked with achievement-related behavior, such as learning and working, and mental health concepts (e.g., optimism, pessimism, anxiety, and depression). Attribution theory helps explain not only how individuals perceive their own successes and failures, but also how they causally ascribe the achievement of others.

The authors of this article postulate that individuals who have medical impairments can attribute occupational disability to an accident or injury for no other reason than a temporal connection—that is, the person became unemployed after a trauma. Since the injury allegedly resulting in impairment came at the time of or after an accident, it is implied that the accident caused the disability. It can be argued that a time-based explanation in the determination of what causes occupational disability is often inadequate in explaining disability given the multitude of other factors, including pre-existing medical conditions, that can cause unemployment subsequent to, but not necessarily as a consequence of, the indexed traumatic event.

For example, a 38-year-old female who sustained a whiplash injury in an automobile accident stopped working as an outside sales representative 5 months after the accident and claims that her chronic regional pain syndrome, diagnosed after the accident, was the cause of her occupational disability. Careful investigation, however, revealed that she was previously treated for rheumatoid arthritis and fibromyalgia. Her theory as to why she was unemployed with a loss of economic power was that her occupational disability was directly and causally related to the whiplash injury. A physician treating her declared that her chronic pain complaints were directly linked to the whiplash injury that had become the basis for the patient's personal injury lawsuit. In reality, her chronic complaints of pain and concomitant allegations that she could not work were multifactorial at least. Further investigation revealed that this sales representative was being disciplined at work for low production. Additionally, the company for which she worked was being purchased by another entity, and rumors were circulating that layoffs of sales representatives would occur as a result of the acquisition.

Causal attributions of occupational disability are best made by trained observers or evaluators who fully appreciate the psychosocial context in which causal attributions of acquired disability are made. Occupational disability has been studied from numerous social and psychological perspectives. Important constructs have been offered to help better understand and explain the non-medical antecedents and consequences of vocational disability. The concepts of disability without disease and the disability process, learned helplessness (and laziness), co-malingering, locus of control, loss of self esteem, disability induction, disability proneness, illness behavior, and the meaning of work help us understand some of the underlying principles of disability causation.

Disability Without Disease and the Process of Disability

After spending many years treating injured autoworkers, Behan and Hirschfeld set forth their idea that injured employees can exhibit disability without disease or accident (1966). Borrowing on this concept, Weinstein delineated the process of disability in 1978.

Weinstein (1978) graphically portrayed the stages of the disability process. He reasoned that the troubled worker, when faced with negative feedback regarding his or her performance, would eventually reach a stage where tension build-up would become overwhelming and viewed as an unacceptable disability. Weinstein argued that an accident or illness, seen retrospectively as an explanatory event, would allow the unacceptable disability to become acceptable and stabilize with medical explanations, diagnostic studies, and eventually unnecessary interventions, such as surgery or chronic pain management involving crippling medications. Behan and Hirschfeld (1966, p. 659) concluded, "This remarkable capacity of disability to seize an accident as its apparent cause results in terrible chronicity."

Learned Helplessness (and Laziness)

Walker (1992) offered the concept of learned helplessness as a useful framework in understanding how injured workers perceive loss of control in the workers' compensation system—a system that simultaneously rewards and punishes injured workers. Learned helplessness is caused by repeated experiences of aversive, uncontrollable situations. The person caught in a learned-helplessness syndrome exhibits passive, resigned, and inflexible behavior associated with dysphoric feelings of depression. Walker described how the workers' compensation system breeds conditions ripe for injured worker helplessness. However, he also pointed out that the very same system often financially rewards people non-contingently, thereby also inducing learned laziness by making a return to work financially impractical or disadvantageous for the workers' compensation claimants. Walker argued that injured workers, trapped in the quagmire of workers' compensation systems as they are designed (i.e., to make a person whole), generally manifest amotivational behaviors and surrender their will to work. After proposing learned helplessness as a model for depression and motivational disturbances, Seligman (1975) reformulated the learned helplessness model to include the concept of attributional style. That is, individuals with particular attributional styles are more susceptible to learning helplessness.

Co-Malingering

Lost time from work may be a function of either medical restrictions that are related to impairment as determined by physicians or dysfunction associated with behavior and social relationships that develop both before and after the accident/injury. At times, injured workers are accused of malingering, the falsification of symptoms to avoid responsibility, including work. Only 10% of compensable lost time is due solely to medically imposed restrictions (Mitchell & Leclaire, 1993). "All other reasons for lost time are due to employer- and employee-controlled impediments for return-to-work, such as inflexible supervisory decisions, poor injury management practices, breakdowns in communications, and/or employer failures to make reasonable work accommodations."

These employment situations may represent a form of co-malingering that Kenneth Mitchell, who coined the term, described as "the mutual actions of employers and employees that extend [the] disability duration and impede early return to productive employment" (Mitchell & Leclaire, 1993). Co-malingering is also sometimes referred to as negotiated disability. "Employees incur 100% of lost time; employers control 90% of it" (Mitchell & Leclaire). However, for many years now, we have recognized that other members of the lost-time community can also function in relation to the injured employee as co-malingerers, and those other parties include physicians, lawyers, and family members. Co-malingering appears to be

much more common than malingering in lost-time cases.

Locus of Control

Locus of control is a useful construct in terms of vocational rehabilitation. At its simplest, locus of control is an individual's perception of the cause of events in one's life: either one believes he or she controls his or her own destiny (internal), or one believes that others, luck, or fate control one's outcomes (external).

Locus of control is closely related to the concept of attribution. An attribution is an explanation of what happens to one's self and/or others. In general, an internal locus of control is seen as being more desirable. Consider the following descriptions of internality and externality:

- It is an internal attribution about oneself when one succeeds (I did it myself).
- It is an internal attribution about others when they fail (It was their fault).
- It is an external attribution about oneself when one fails (Something/Someone else made me fail).
- It is an external attribution about others when they succeed (They got lucky).

Research (Mamlin, Harris, & Case, 2001) has shown the following trends:

- Males tend to be more internal than females.
- As people get older, they tend to become more internal.
- People higher up in the organizational structure tend to be more internal.

Although these trends are not absolute, they may serve as a starting point for vocational counselors working with clients. It is generally agreed that locus of control is largely a learned condition. For a client who is resisting vocational counseling and incidentally exhibiting an external locus of control, it may be a useful strategy to work toward reversing that bias. There are a number of questionnaires that are designed to determine internal and/or external locus of control. Rotter's original "29-item Locus of Control Questionnaire" is still used, and newer questionnaires are also available.

The value of starting with knowledge of the client's locus of control bias is that an external locus of control can lead directly to the loss of control. The important research in respect to loss of control is Seligman's learned helplessness (1975). Since locus of control is learned as opposed to innate, clients drift toward learned helplessness as a maladaptive outcome of having no control over what is happening to them. Moving from what may have been an internal locus of control to an external locus of control is a maladaptive adaptive response that may be reversed by sharing knowledge of the condition with the client and devising reversal strategies. Counselors need to be cautioned against simplistic judgments derived from an over-reliance on the locus of control concept, but sharing knowledge about a reality can seldom be injurious. Acknowledging personal responsibility is an important first step for clients resisting return-to-work actions.

Loss of Self-Esteem

Another significant factor in resisting a return to work after an illness or accident is rooted in psychological issues such as depression, anxiety, and low self-esteem. Frese and Mohr (1987) stated, "Depressed persons who are inactive and pessimistic in their outlook will be unemployed much longer or will become unemployed more readily."

Weinstein (1978) pointed out that a worker's loss of self-esteem taking place simultaneously with decreased productivity are two key factors in unacceptable disability that requires an explanatory event, such as a future accident or injury in order to justify continuing dysfunction and ultimately a prolonged period of lost time from work. In other words, Weinstein believed that a worker's loss of self-esteem is a key predictor to future vocational disability even before the accident that will be labeled the cause of lost time. Furthermore, Weinstein pointed out that following the explanatory event, medical, psychological, and social factors may actually work to restore the individual's self-esteem and allow for him or her to be declared "honorably disabled," thereby signaling a stabilization and chronicity to the disability.

In the final analysis, intractable cases of depression and/or personality dysfunction will need to be referred to competent mental health professionals who understand behavioral medicine and the importance of vocational rehabilitation. Of course, most rehabilitation counselors are not trained as clinical psychologists, but there are interventions that vocational counselors can and should utilize. Basic interventions that can be applied in counseling clients who are resisting return-to-work would include the following:

- Discussing the importance and the value of work with the client.
- Identifying and discussing psychological issues, especially depression, the loss of self-esteem, and the need to find ways to overcome them.
- Discussing locus of control and causal attributions and their significance to motivation and productive return-to-work efforts.
- Recognizing learned helplessness and planning a way to achieve countervailing strategies to prevent helplessness from establishing itself.
- Setting realistic goals with clients and helping them work to achieve goals.
- Supporting the client throughout the counseling and behavioral change processes.

Kelly (1955) said of vocational development, "It is one of the principal means by which one's life role is given clarity and meaning." Vocational rehabilitation counselors hold a significant responsibility to assist clients in understanding the obstacles to personal fulfillment through work and to provide the professional guidance to help their clients achieve clarity and meaning.

Disability Induction

Occupational disability and lost productivity can often be explained by understanding that acquired disability can be encouraged, prompted, influenced, and solicited. That is, vocational disability can be induced. At least four separate methods of disability induction have been identified: iatrogensis, beaurogenesis, litogenesis, and psychogenesis.

Iatrogenic. Iatrogenic disability occurs more frequently than the casual observer might suppose. Low-back surgery, for example, is well known to resolve less often in the injured-worker population. Indeed, for many years, a successful neurosurgeon

in Philadelphia would not treat compensable back injuries surgically because of the dramatically different "success" rates in the occupationally injured versus non-occupationally impaired populations.

Iatrogenic disability need not be the result only of surgical intervention. Physician induction of disability can often result from mere suggestion. The susceptible, or all-too-vulnerable patient can hear, or think he or she heard, the physician say that the patient is "unable to work." Physicians unknowingly underestimate or consciously abuse the power invested in them by the generally naïve health care recipient.

Disability induction through iatrogenic means is sometimes a function of the employer not insisting that its health care providers stay within their disciplines and avoid making vocational decisions. Employers and employees make vocational decisions; physicians diagnose and treat disease.

Beaurogenic. Work disability is often caused by the bureaucracy that surrounds occupational injury and non-occupational disease. Organizational policies and personnel decisions often ignore the consequences of shortsighted and antiquated return-to-work practices. From "you cannot return to work until you are 100%" to "light duty for workers' compensation recipients only," light duty programs seldom serve both employee and employer. Although the rising costs of workplace disability and the Americans with Disabilities Act led to some reevaluation of these return-to-work standards in the 1990s, the beaurogenic induction of disability remains a significant problem for most work organizations and our country at large.

Some self-insurers of both workers' compensation and long-term disability have failed to realize that, as work organizations, they create disincentives for employees to return to work following the onset of injury or illness. With employees able to receive nearly 70% of their income in wage-replacement benefits, the employer has introduced secondary gain as a factor that the injured or ill worker would find difficult to overcome despite a strong work ethic. The Social Security Administration has recognized that most recipients of Social Security Disability Insurance are of working age, yet few take advantage of the trial work period available to them. The widespread use of managed care organizations in the treatment and rehabilitation of injured workers raises a legitimate question regarding the possibility that managed care adds a layer of bureaucracy to the already complex social and political systems that induce disability in the workplace. Bureaucracies can foster disincentives to get well and return to work.

Litogenic. When representing injured or ill employees (or people pursuing economic damages through personal injury litigation), legal advocates hope to demonstrate that their clients have lost their potentials to work and earn a living. Lawyers, in their advocacy of injured employees, pursue economic recovery in claims such as personal injury, workers' compensation, Social Security disability, and long-term disability. These litigations almost always induce or encourage an argument of disability. Even the most ethical lawyers believe that their clients have more to gain if they can prove economic damage secondary to vocational disability.

"Physician induction of disability can often result from mere suggestion. The susceptible or all-too-vulnerable patient can hear, or think he or she heard, the physician say that the patient is "unable to work." Physicians unknowingly underestimate or consciously abuse the power invested in them by the generally naïve health care recipient."

Psychogenic. Psychogenic disability suggests the inability to work because of symptoms caused or produced by mental or psychological factors rather than organic problems. Depression, substance abuse, personality disorders, and psychosis can lead to psychogenic disability. Unfortunately, health care professionals often legitimize symptoms manifested following the diagnosis of a disease or disorder that is not necessarily disabling.

Psychogenic disability can arise when workers blame symptoms secondary to stress on an external cause rather than taking responsibility for reducing the stress. Psychogenic disability is often precipitated by work dysfunction. For an excellent text on psychogenic disability and its causes, see *Psychiatric Disability: Clinical, Legal and Administrative Dimensions,* published by the American Psychiatric Press, Inc.

Disability Proneness

Some employees have predispositions toward disabling diseases or illnesses. Disability proneness is a real and significant phenomenon antecedent to and at times a cause of many cases of chronic vocational disability. Individuals with particular work dysfunctions are more prone to occupational disability and claims of incapacity. It is believed by the authors that the workers' compensation system in particular breeds the requisite conditions for learned helplessness and laziness, and that particular attributional styles make individuals more prone to developing chronic disability than others with different styles of causal attribution.

Illness Behavior

Illness behavior is frequently exhibited by individuals who are indeed sick. However, some individuals exhibit illness behavior that is abnormal or inappropriate to the situation. According to Pilowski (1978), abnormal or inappropriate illness behavior is "the persistence of an inappropriate or maladaptive mode of perceiving, evaluating, and acting in relation to one's own state of health," even though available evidence suggests that this illness behavior is unexpected or inappropriate. In other words, inappropriate illness behavior is thought to be exhibited if individuals are convinced that an organic disease is caus-

ing their pain or other symptoms but no evidence of organic disease exists or the illness behavior is inappropriate to the organic disease that does exist.

Illness behavior as a concept provides a framework for understanding the observed differences among pain patients. According to the Institute of Medicine (1987), "Illness behavior is a process that includes a perception of one's own symptoms, and attribution of meaning to them (from something trivial to an ominous indicator of serious illness), and the way in which one seeks help in dealing with the symptoms. Such behavior is influenced by the person's personality and coping style and by the surrounding culture and society. The fact that such factors can be strong influences on the pain or other symptoms that people experience does not, however, make pain any less real."

The meanings a patient gives to an accident, sickness, personal suffering, or the relentless presence of pain affect subsequent illness behavior and help order experience in several ways. Patients form causal attributions to account for their perceived circumstances. Limitations imposed on a patient's lifestyle by chronic pain may be significantly attenuated if the patient believes that he or she can control the pain or can, despite the pain, undertake activities without harm. In contrast, it has been observed that patients who believe they have little or no control over their health and well being (learned helplessness) endeavor less effectively to achieve rehabilitation (Pilowski, 1984). Finally, personal meaning of an illness or symptom may affect self-esteem either positively or negatively. Becoming an invalid, even briefly, can be a blow to a person's self-esteem. Similarly, being unemployed or forced to accept employment at a lower wage or job status because of pain can be demeaning. However, for some patients embracing the sick role is seen as an elevation in status (i.e., honorably disabled). These people value the nurturance and special consideration of friends, family, and neighbors that follow injury and the development of chronic pain. Personal meanings are likely to be influenced by the shared meanings of the group to which the individual belongs (Institute of Medicine, 1987).

At the same time, the meaning of work held by the individual and/or the group to which this individual belongs can be a powerful influence on the individual's capacity or willingness to overcome illness behavior. When work is a central theme in the injured person's life, chances are illness behavior and associated dysfunction will not lead to total vocational disability.

The Meaning of Work

During research at New York University, Wrzesniewski (2003) determined that individuals experience work in one of three distinct ways:

• Job—the individual is primarily con-

cerned with the financial rewards of work.
• Career—the individual is focused on advancing within the occupational structure.
• Calling—the individual works not for financial gain or career advancement, but for the sense of fulfillment that work brings.

Usually individuals who view their work as just a job prior to the onset of injury or illness are less likely to return to work than individuals who consider work a career. In contrast, individuals who perceive work more or less as a calling are eager to return to work following illness or injury.

Employees who believe that work is a calling are not representatives of esteemed professions only. Just as many longshoremen, waitresses, custodians, and landscapers fully invest in their vocations as callings as do teachers, lawyers, and physicians. The meaning of work is an experience unique to the individual and not necessarily a function of how society in general might perceive the job title and the employee's day-to-day responsibilities.

When organizational leaders can imbue every member of a work team, from the least skilled to the most highly trained, with the belief that each employee is highly valuable and important to the organization's success, the organization will probably have fewer problems with lost time. Take for example the camaraderie of a hospital maintenance staff. The members of the maintenance staff were encouraged to wear surgical garments to work. The maintenance manager felt that without his crew's involvement, the hospital could not operate and effective health care could not take place, no matter how skilled the staff physicians. This simple but clever gesture was, of course, designed to remind the maintenance staff members of their critical contribution to the hospital's daily functioning. That particular hospital maintenance staff had few instances of occupational injury/illness/lost time.

The development of occupational disability or the onset of acquired vocational disability may result traumatically from a single event (i.e., the above the knee amputation in a professional football player), but as we have shown above, acquired total disability is often a process that involves numerous contributions that are not only medical in nature, but also psychosocial. Because acquired disability is heavily weighted by psychosocial dynamics, we believe that professionals trained in determining impairment (medical authorities) should defer to vocational counselors for a total picture—or explanation—of acquired disability.

Causal Attributions of Acquired Disability: Who Is "Qualified" to Make the Call?

The difference between medical impairment and occupational disability is not only a significant distinction, but one that must be recognized in the proper adjudication of damages in personal injury claims. As noted above, the American Medical Association recognizes that impairment refers to an alteration of an individual's health status and is assessed by medical means. Disability is an alteration in an

can assist trained observers in identifying the causes of unproductive occupational states.

What is also clear is that in most cases the vocational expert, who is trained and experienced in disability analysis, is generally better prepared than a medical expert, who may not fully appreciate the exertional and non-exertional demands of specific jobs, or more importantly, how those demands might be reasonably reduced by job accommodation. Although it is true that medical experts have greater training than vocational professionals in understanding physical and/or mental diseases, the critical factor in disability assessment is whether an individual with physical and/or mental impairment can function in relation to a particular set of job demands.

A Case in Point: The Electrician

A 56-year-old industrial electrician fractured his back while operating his son's trail bike. The electrician attempted to return to his customary work after spinal surgery and rehabilitation, but persevered no longer than 8 weeks after medical rehabilitation, and subsequently claimed total vocational disability and absolute loss of earning power in his personal injury lawsuit against the motorcycle manufacturer.

The electrician's lawyer hired a vocational expert who interviewed the electrician, performed no vocational testing, and opined that the electrician could not work in any capacity and had lost all power to earn money based on the interview information and medical records, including statements from the treating physician that his patient, the electrician, was totally disabled. Meanwhile, the industrial plant in which the electrician had worked for 25 years closed down. Nonetheless, the plaintiff's vocational expert opined that through the union, the electrician could have continued to work as a journeyman, work involving medium and heavy physical demands, had he not been injured in the trial bike accident.

The defendant hired an orthopedic surgeon to examine the plaintiff's back complaints. The consulting physician found and stated with certainty that the electrician did have exertional limitations and that his spinal impairment prevented him from lifting more than 10 pounds and performing more than sedentary work.

The defendant also retained a vocational expert. The vocational expert reviewed the plaintiff's complete medical records, studied the electrician's employment/personnel file, interviewed the electrician, and performed a battery of standardized tests measuring abilities, aptitudes, temperament, and interests. The testing showed that the electrician possessed the linguistic capabilities and vocational aptitudes sufficient to perform sedentary desktop positions, such as maintenance scheduler, production scheduler, and motor vehicle dispatcher. The electrician expressed greater interest in communication work than in his prior employment of craft technology. The defendant's vocational expert also found that medical documentation showed that the electrician had chronic left, dominant upper-extremity impairments, including a rotator cuff tear and chronic shoulder bursitis secondary to a work-related accident caused when he tried to lift a 65-pound fiberglass ladder 5 years before the motorcycle accident.

> "What is abundantly clear from evaluating thousands of people who claim they cannot work is that thorough history taking is a crucial step in gathering sufficient information in order to determine the cause(s) of lost time following an observable change in a worker's health status."

The defendant's vocational expert also reviewed the electrician's personnel and occupational health records, which revealed that the plant physician had consistently restricted the electrician to lifting no more than 30 pounds with his left upper extremity occasionally and 10 pounds frequently. For the last 4 years of the electrician's employment, the company had maintained him on restricted duty, working exclusively in the maintenance shop. Finally, company records revealed that the plant closed down, as noted, 1 year after the electrician stopped working. The defendant's vocational expert opined that the electrician was disabled from the full range of physical activities associated with his craft by his pre-existing upper extremity impairments, which had obviously limited the electrician for several years prior to the personal injury event. Moreover, the defendant's vocational expert declared that the electrician could not have functioned as a journeyman electrician in the open labor market (as alleged by the plaintiff's vocational expert) absent the spinal injury because of pre-existing upper extremity limitations and medically established lifting restrictions.

The Outcome. Who is right? What should a judge decide about these opinions and arguments? Does the determination of what constitutes occupational disability remain with the medical expert? Does the vocational expert possess the knowledge and skill to make a causal attribution of occupational disability when he or she knows that certain pre-existing or unrelated medical conditions would in all probability make certain physical demands as an electrician impossible to execute? Is not the vocational expert compelled to take a thorough medical history and consider all health-related issues that might otherwise affect an individual's employability?

The plaintiff's medical expert stepped outside the confines of her expertise and offered a vocational opinion of total disability. The medical opinion of disability, for all intents and purposes, nullified the purview of the vocational expert, and perhaps the plaintiff's vocational expert perceived little choice but to follow suit and also opine that the plaintiff was totally vocationally disabled. Incidentally, in his opinion, the plaintiff's vocational expert declared that the Social Security Administration had found the plaintiff totally disabled, and therefore, he agreed.

What the plaintiff's vocational expert failed to recognize is that Social Security disability determinations are not accident or injury specific; disability is determined on numerous factors, including the individual's residual functional capacities without taking into account the cause of the impairment(s) or other dysfunctions (limitations) at issue. Neither of the plaintiff's experts considered the totality of the electrician's medical history, especially his pre-existing upper extremity limitations and their occupational relevance in terms of the plaintiff performing the medium and heavy work of the journeyman electrician's trade, notwithstanding the effects of the spinal impairment.

The defense medical expert was told to examine the plaintiff's injury-related complaints, including his spinal impairment and associated lower extremity symptoms, but did little investigation into this man's prior upper extremity medical history. The defense vocational expert, supplied with sufficient information to understand the plaintiff's employability both before and after the accident in question, could attribute the plaintiff's vocational disability from journeyman electrical work to a pre-existing upper extremity disorder, notwithstanding the effects of the musculoskeletal injuries sustained in the motorcycle accident.

Case 2: The Lawyer

A lawyer suffered a stroke, and on the way to the hospital the ambulance was involved in an accident. The lawyer was trapped under the wreckage and miraculously survived. However, when he arrived at triage, he presented with a significant compound fracture, and although the fracture was repaired, an infection set in. As a consequence, the lawyer lost his leg above the knee. The stroke, for its part, resulted in cognitive and language deficits. Through rehabilitation, the recovering man struggled with using his prosthesis and ultimately decided that life was easier in a wheelchair. He tried to return to his profession but struggled with neuropsychological impairment. A lawyer representing the man in court argued that the motor vehicle accident resulting in the compound fracture and resultant amputation caused the lawyer occupational disability and lost earning power. Which of the medical impairments, the neuropsychological deficits or the post-amputation ambulation problems, caused disability in the practice of law?

Although causal attribution of occupational disability in the case of the lawyer may be more evident than in the case of the electrician, both scenarios represent a potential problem for those who do not fully appreciate the difference between medical impairment and occupational disability in the adjudication of monetary damages associated with lost work capacity. When the injured lawyer was neuropsychologically evaluated by a consultant retained on his behalf, the neuropsychological examiner explained that the lawyer's cognitive deficits were not secondary to the stroke, but rather a result of reactive depression linked to the loss of the limb. However, the defendant retained both a neuropsychological expert and a vocational expert. Both tested the lawyer with objective personality measures and found that the lawyer was indeed anxious, but not depressed. Moreover, the defendant's neuropsychologist found a pattern of neuropsychological deficits that were directly associated with brain injury in an area of the cerebrum shown by the MRI to be damaged by the stroke. The vocational expert opined that based on all of the information gathered and reviewed, the lawyer's vocational disability was a result of the stroke and not the post-MVA amputation. Had he not had a stroke, the attorney could still be practicing law.

The vocational expert or occupational disability analyst is frequently confronted with the problem of assessing the employability of individuals with a history of multiple medical impairments. More often than not, the expert is asked to opine as to the effect of trauma/injury on the occupational capabilities of an individual who has a pre-existing impairment or co-morbidity. The disability analyst's challenge is to determine the effect of pre-existing impairments, and with thorough medical information, perhaps the differential functional effect of co-morbidities and how those affect an individual's capacities to work.

Case 3: The Teacher

In still another example, a teacher who had a long history of mental disorders, specifically a so-called manic depression that had not been well controlled, claimed that because of a motor vehicle accident (MVA) and an associated whiplash injury, he suffered from chronic neck pain, dominant upper extremity radiculopathy, and headaches. It could be argued that the MVA injuries alone could constitute disability in classroom instruction. However, what effect would the uncontrolled bipolar disorder have upon the teacher's capacities to work? It would be difficult to resolve this issue on a logical basis. Moreover, the history of this specific claimant's pre-existing mental disorder may be legally eliminated as a factor because it might have produced prejudice for a fact finder or a jury.

The authors of this article believe a vocational expert is better able to attribute occupational disability to a particular cause and to determine residual employability in individuals who are impaired. This is because the vocational expert is more knowledgeable in the actual demands of particular jobs throughout the world of work and should be in a position to thoroughly analyze the injured person's vocational options in light of medical impairment, whether singular or multiple. Certainly, the medical professional is better qualified to identify and describe medical impairment (physical and/or mental) and, in some cases, the injured person's residual functional capacities. But it is the vocational expert (knowledgeable of medical impairments, their general effects on functioning, and how dysfunction might interact with job demands) who remains far better suited than medical professionals to state with certainty whether a particular individual possesses the ability to work (residual employability) or the capacities to perform gainful activity. More to the point, both medical experts and vocational experts possess unique training and skills that require the assistance of the other in fully determining whether an individual can work gainfully and in clearly determining what particular health problem may be occupationally disabling.

Obviously, whatever the training and experience of the individual evaluator,

thorough histories are critical in understanding the entire picture of the injured worker and how that history relates to acquired disability. It is important to recognize that a lack of adequate history-taking can lead to unnecessary or inadequate medical treatment, which is sometimes a contributing factor or indeed a cause of acquired disability.

Conclusion

Acquired disability following an accident or injury begs to be explained. Disability is explained by the person who experiences lost time and by a host of others in the injured person's social and professional networks. Based on our experiences and the contributions of informed others, disability can be explained by numerous psychosocial dynamics independent of the actual injury or impairment, forces that can precipitate, cause, and stabilize unproductive states following trauma or any change in one's health status. Too frequently, these dynamics are overlooked in consideration of what appears to be the most obvious reason for the absence from work, a so-called "explanatory event." We have also concluded with certainty that a thorough and accurate history is necessary to assess pre-accident work longevity, determine residual employability, and causally ascribe occupational disability to a particular event. Possessing a complete and reliable history (preferably from documentation of various sources) places the expert charged with disability analysis in a better position to offer a professionally certain opinion.

What Behan and Hirschfeld (1966) call disability without disease or accident does exists. We recognize the importance of attributional style in an individual's effort to explain disability. Causal attribution of occupational disability remains a major issue that often challenges all rehabilitation personnel in forensic vocational/disability assessment matters and occupational rehabilitation of those who have become injured or ill. The more detailed and reliable a picture one can construct and the more information provided about the injured worker's personal constructs and tendencies to explain cause-and-effect, the more accurate the examiner can be in not only assessing vocational disability but its actual cause(s). Solutions can be found through explanations and finding causes.

The question, "Who is qualified to make the call on occupational disability?" is not yet answered. Neither expert, medical nor vocational, may be in an absolute position to make judgments regarding residual employability, pre- and post-capacity to work, or the causal attribution of vocational disability unless the expert is fully informed of the multitude of medical and psychosocial dynamics that surround an individual's claim of occupational disability.

Causal attribution and attribution theory are critical determinants in disability chronicity following accident and injury. The literature on pain in disability offers substantial insight into the multiple factors that can cause one to claim total vocational disability. Medical, rehabilitation, and legal professionals are encouraged to recognize the complexity of occupational disability claims. There needs to be more frequent and thoughtful research in the areas of psychosocial antecedents to vocational disability, illness behavior in situations of claimed disability, and attribution theory as determinants of vocational disability.

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