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Failure to Accommodate Sensitive Populations:
Cultural and Individual Consequences

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Abstract

This paper discusses the individual and cultural consequences of failure to accommodate workers who develop health effects related to environmental toxins including sick building syndrome, building related illness, and multiple chemical sensitivity. Attention is given to the difficulties related to lack of workplace accommodations including personal consequences and workplace climate, individual and cultural effects that ensue when sensitive workers are excluded from the workplace, and the preventability of most workplace-engendered environmental illness

Failing to Accommodate Sensitive Populations: Individual and Cultural Consequences

In 1989, EPA employees of Washington, D.C.'s Waterside Mall building submitted a petition to their superior administrator William K. Reilly protesting the facility's indoor air quality (Belson, 1989). Renovations such as fresh paint and new carpet, intended to improve the quality of the building, had instead negatively affected worker health. The 1989 petition was the third of its kind (Gonzales, 1989). By November of 1992, employee complaints had escalated, and within a year's time over 100 of the E.P.A. physicians, lawyers, toxicologists, and scientists had quit their jobs due to building related illness (Svoboda & Hartinian, 1997). That workplace engendered illness emerged in the agency charged with protecting the nation's health from environmental contaminants was both ironic, and indicative of the seriousness of indoor air pollution.

Today, indoor air pollution is increasingly a factor in workplace-induced illness. Sick Building Syndrome (SBS) and Building Related illness (BRI) are two problems that often emerge in buildings with ventilation problems. The legal differences between these two are slight. Sick Building Syndrome (SBS) is said to occur when a building is the source of health difficulties for many of its occupants; inhabitants may complain of ailments such as "upper-respiratory irritative symptoms, headaches, fatigue, and rash" (Redlich, Sparer, & Cullen, 1997, p. 1013). When occupants leave the building, their symptoms subside. This diagnosis does not legally infer a direct link between occupant health and the building itself. BRI can be a more significant diagnosis because it substantiates a causal link between the building and occupants' symptoms. Recovery time is often longer for the debilitated worker. Both diagnoses can be precursors to the chronic disease Multiple Chemical Sensitivity (MCS) (Mitchell, 1999).

Multiple Chemical Sensitivity is a condition in which persons experience negative symptoms from common chemicals. Symptoms vary from mild to life-threatening, can

affect any organ system, and often include headaches, fatigue, joint pain, dizziness, depression, tension, increased or decreased heart rate, confusion, or muscle spasms (Ashford & Miller, 1998; Lewith & Kenyon, 1985; Randolph & Moss, 1982).

A group of 34 researchers and clinicians with experience in the “study, evaluation, diagnosis, and/or care of adults and children with chemical sensitivity disorders” (p. 147) has published a consensus statement supporting a definition of MCS adapted from Nethercott, Davidoff, Curbow, & Abbey (1993) that includes the following six criteria:

1. The symptoms are reproducible with repeated chemical exposure.
2. The condition is chronic.
3. Low levels of exposure (lower than previously or commonly tolerated) result in manifestations of the syndrome.
4. The symptoms improve or resolve when the chemical catalysts are removed.
5. Responses occur to multiple chemically unrelated substances.
6. Symptoms involve multiple organ systems (added in 1999).

(Multiple Chemical Sensitivity: A 1999 Consensus)

SBS, BRI, and MCS seem to occur on a continuum that in its whole comprises those who have sensitized to contaminants in the work environment. This paper will use the terms “sensitive workers” and “sensitive populations” when discussing workers who have to some extent become sensitized or ill from workplace contaminants. This paper discusses: 1) workplace loss and disruption due to failure to accommodate sensitive populations, 2) the individual consequences for unaccommodated workers, and 3) the potential preventability of workplace-induced illness.

Sensitive Populations in the Workplace

Workplace-engendered illness is costly and disruptive for both employer and employee in that industry jeopardizes its most important asset, the worker, while the

worker risks his or her health and functional ability. The destructive consequences of this phenomenon are considerable, and disturbing in that they may be preventable.

Workplace air quality has not generally received adequate attention or been taken seriously, as society has at times tended to attribute workplace-engendered illness to psychological problems. Sick Building Syndrome (SBS) was initially attributed to mass hysteria (Soine, 1995) and researchers attempted to search for a personality constellation that would render a person susceptible to SBS. Yet no psychological constellation has emerged. Instead, SBS is associated with offgassing from indoor contaminants (including volatile organic hydrocarbons) involved in remodeling materials such as carpet, paint, formaldehyde, and pesticides (Rogers, 1989). Scandinavian studies have associated all of the following with the onset of symptoms in sick buildings: gender, pre-existing asthma or rhinitis, a history of atopy, job category, photocopying, VDT use, and handling carbonless paper (Ashford et al., 1995).

The consequences of ignoring employee complaints have been described as clearly negative for the workplace. When workers perceive unsafe working conditions, workplace climate suffers through a number of mechanisms. Kroll-Smith and Couch (1991) have articulated the divisive dynamics that may develop among workers when some become convinced that they are being exposed to unsafe environmental contaminants. Workers polarize around the issue with one group chastising the other for being complainers, and the concerned group feeling alienated and unsupported in the process. A poor relationship between workers and management develops because workers perceive a lack of consideration for their well-being. In addition, if the problem continues and workers' health degenerates, systems incur not only the expense of rectifying the problem, but increased requests for financial support in the form of workers' compensation and disability.

Morrison and Robinson (1997) defined a psychological contract between an employer and employee as “a set of beliefs about what each party is entitled to receive, and obligated to give, in exchange for another party’s contribution” (p. 228). The authors have cited many studies showing that violation of the psychological contract leads to a decrease in employees’ trust in their employers, job dissatisfaction, and less motivation to remain at the place of employment. Lawson (1987) described 45 individuals who had been repeatedly exposed to toxic chemicals at their work site. Some employee complaints included headaches, nausea, depression, excessive anxiety, difficulties with concentration and memory, low energy, irritability and anger problems. All of these workers felt that the exposure was life-endangering and were “experiencing psychological and somatic symptoms typical of victimization and post-traumatic stress responses” (Lawson, 1987, p.25).

The worker in the process of becoming sensitized faces considerable difficulties both in and out of the workplace. If the condition has progressed to MCS, it may jeopardize continued employment. The worker’s self-esteem is affected, as psychological well-being in a competitive economy is intertwined with work. Lack of acknowledgement of the problem by the workplace leaves the illness as an individual health problem. “Organizations see illness as the responsibility of the individual especially when economic conditions allow” (Vickers, 1997, p. 242), a situation likely to engender guilt, shame, and anger in the worker.

Sensitive workers qualify as persons with invisible illness, given the generally hidden nature of the initial phases of their condition. Workers with invisible illnesses face various problems when trying to remain employed. One worker dilemma is the issue of disclosure of his or her condition. Many times a worker will disclose an illness believing that there will be support and accommodations made (Vickers, 1997). Unfortunately, this is not always the case. Rather, people may experience discrimination, stereotyping

and prejudice (Vickers, 1997). In a classic example of discrimination against persons who require work accommodations, Dyck (1995) has described a woman with a chronic illness who was asked to sign a waiver for long-term disability prior to her employment. Sensitive populations may thus delay requests for workplace accommodations due to the predominant attitudes regarding the legitimacy of MCS and related conditions. Consequently, by the time accommodations are requested, the person's health may be considerably compromised. If accommodations are not made, the person may first try to work without them, only to become sicker in the process (Gibson, 2000). In addition to aggravated symptoms, persons encounter difficulties with co-workers who are poorly educated regarding sensitive populations. Invisible conditions are likely not recognized nor legitimized. Hence co-workers' behavior may occur on a continuum from empathy to hostility. Co-workers may be particularly uncooperative when asked to discontinue fragrances or other personal care products that are sources of difficulty for sensitive workers.

The experience of attempting to continue work in the face of illness and poor treatment is a depleting one for the worker, but the fear of financial ruin and of loss of a productive work life are impetus to continue. Consequently some persons push themselves beyond what their bodies can endure and become even more debilitated in the process.

Despite the seriousness of the physical symptoms, the sensitive worker's illness remains invisible. Vickers (2000) cites uncertainty, anxiety, anger, and fear as negative emotions that workers with invisible illness might experience. In addition, sensitive workers live with uncertainty due to the lack of understanding or acceptance of their conditions. Sensitive populations seldom understand their condition at onset; once diagnosed they encounter feelings of uncertainty regarding the future. Anxiety in the worker's life is a natural response to the prospect of multiple losses. In discussing

unseen illness, Vickers (2000) asserts that “anger can be aroused at the limitations imposed on one’s life” (p. 17). The overall physiological deficits that workers experience as a result of sensitization incite fear of further debilitation.

Sensitive workers are at risk for workplace alienation for a number of reasons. People with full-blown MCS, in particular, often cannot interact with other people due to reactions to personal care products. This feeling of alienation may grow because of the general public’s lack of knowledge about the disorder and subsequent lack of empathy with the worker’s needs. Vickers (2000) states that people with invisible illnesses experience aloneness because people do not understand the disorders and, as a result, do not communicate with the worker about the illness.

An additional aspect of alienation relates to the issue of body image. Vickers (2000) cites the societal assumption that a healthy appearance is indicative of bodily integrity. Sensitive workers do not always outwardly display the symptoms of the disorder. Consequently, the apparent lack of suffering precludes acknowledgement of their illness, and accommodations are not made. The sensitive worker then perceives an indifferent attitude on the part of co-workers.

Even if through supreme effort the person is able to remain working, all personal resources are likely to be consumed by the effort. All other life activities including time with family and social contact diminish. The person is isolated both in and out of the workplace.

Sensitive Populations Beyond the Workplace

Exacerbated illness reactions may eventually dictate that the sensitive worker is no longer able to work. Some workers try a series of alternate and often lower paying positions in attempt to find a chemically safe environment. These attempts often fail. Some take a hiatus and attempt to return to their previous or to a new workplace, but without needed accommodations. This is also likely to fail. At some point the person

faces the fact that she or he is no longer able to work at all because of the sensitivities. This displacement from the workforce begins a negative life trajectory for the dislodged worker that includes suspension of benefits such as health care, life insurance, and retirement; loss of financial security; and isolation. Gibson, Cheavens, and Warren (1996) found that 205 of 268 persons with MCS reported having lost or been forced to quit their jobs because they were unable to tolerate chemicals in the workplace. Of these 205, 151 eventually joined other disabled Americans and sought disability compensation.

Yelin (1986) showed a profound impact of health issues on the labor force. At the time of the survey, approximately 2.6 million women and 6.4 million men in the United States said they were unable to work due to their health. By 1998, the statistics for the number of people with work disabilities had risen to approximately 8.9 million women, and 8.3 million men (Statistical Abstract of the U.S., 1991). A similar study showed that 19 million Americans cannot work or have work limitations due to disability or health problems (Cited in NIDRR, 1999). Kreutzer and Neutra (1996) found in California that 2% of the state population had lost or had to leave a job as a result of MCS alone. As of January 1996, the Social Security Administration reported that five million people receive social security disability income (Cited in NIDRR, 1999).

Declining Finances

Gibson et al.'s (1996) respondents reported an annual income decline of over \$17,500 after developing MCS. Following loss of work, people search for replacement income. First savings and retirement plans are depleted. Some receive help from their families. If people apply for disability compensation the process is long and difficult, particularly because the person's health is at its lowest ebb. Evaluators including physicians, judges, and others may have no knowledge of sensitivities or toxicology, and often attribute symptoms to psychological causes. For example, Gibson (2000)

reported that it took applicants with MCS a mean of two years to get disability compensation, cost \$2,000 to obtain, and resulted in an award of \$12,000, an income barely above poverty level. Often the award was accompanied by the requirement for re-evaluation in two years, and the label under which the award was made was a psychological one. This was often so even if the applicant's own physician gave only a toxicology-related diagnosis. Yet Social Security Administration guidelines specify that the treating physician's opinion be given more weight than that of other examiners. Particularly if the relationship is a long, well-established one, and if the physician's statement is supported well by case documentation, it is supposed to be given "controlling weight" (GAO, 1995). Not only were the attending physicians' opinions of Gibson's respondents ignored, but many people did not even know their assigned disability diagnostic label. Participants described the process as humiliating, extremely stressful, and traumatic (Gibson, 2000). Almost a fifth of respondents who rated themselves as disabled had made a plan for or attempted suicide (Gibson, unpublished data).

Loss of Health Care Coverage

Work loss often terminates medical coverage denying the worker routine or restorative medical treatment. Particularly problematic is the loss of access to medical care concomitant with a decline in the worker's health. Financial losses limit access to the small pool of health providers who do treat sensitivity disorders. People with MCS in particular demonstrate a host of unmet medical needs from routine dental treatment to general evaluative and intervention services (Engel, Gibson, Adler, & Rice, 1996).

Depletion of financial reserves leads to neglect of physician recommended changes for the home environment that would limit harm from continuing chemical exposures. For example, people are no longer able to stock air and water purifiers with replacement filters, buy environmentally safe products, or attempt any new home accommodations

that would contribute to their possible recovery. Crowley and Gibson (1995) reported on 48 people who considered themselves as totally disabled due to MCS and who had applied for disability compensation through the Social Security Administration. Despite a mean income decline of more than \$20,000, these 38 women and 10 men had spent almost \$10,000 in the previous year and a total of over \$33,000 on illness related expenses.

Loss of Home

The displaced worker is at high risk for homelessness if there is no partner or spouse with a substantial income, or if sensitivities become severe enough that traditional building materials become intolerable. Gibson et al. (1996) found that 66 percent of 305 respondents with MCS had lived in RV's, tents, cars, or in sealed rooms at some time during their illness. Eventually, some become unable to afford any housing and become homeless, perhaps migrating to tent communities in the Southwest where groups of persons with MCS attempt to live away from pesticides, pollen, petrochemicals, and other pollutants. Zwillinger (1997) has documented the plight of those who have been marginalized by MCS in her photoessay The Dispossessed.

Declining Contact with Others/Isolation

Professional and work contacts have already been strained and perhaps severed. Relationships with friends may dwindle as sensitive populations participate less in activities and have less to give to social interactions. Poorer health may prohibit the investment of energy needed to maintain even minimal social contact. People with MCS report low levels of perceived social support similar to those with other chronic illnesses such as diabetes and MS (Gibson, Cheavens, & Warren, 1998). Even family members may isolate the person if demands for chemical free interactions are perceived as unreasonable, or if the conditions are seen as too difficult to accommodate. People thus lose contact with grandparents, children, friends, and others simply because they are

not able to tolerate common chemical exposures. Spouses and other loved ones experience severe stress in coping with an ill family member, face isolation as shared activities diminish, and become at risk themselves for diseases exacerbated by stress. Hence the loss of the MCS person's health represents a loss to significant others as well.

Access to public resources and buildings as well as to other people diminishes with the need to avoid pesticides, perfumes, petrochemicals, paints and other toxicants. Some with MCS are unable to enter grocery stores to buy their own food, access public buildings to vote, visit their children's schools, or attend any social or community functions (Gibson, Warren, Pasquantino, & Cheavens, 1993). Thus a hidden population of persons disabled by workplace toxicants is formed. Eight percent of Gibson et al.'s participants were totally housebound at the time of the study. Research shows that quality of life suffers, as persons with MCS score lower than almost any other group on quality of life measures including social support (Gibson et al., 1998), hope (Gibson, 1999), psychosocial adjustment to illness (Gibson, 1996), life satisfaction (Gibson, White, & Rice, 1997), and illness related dysfunction (Gibson, Rice, Dowling, Stables, & Keens, 1997).

Total Exclusion

The failure to accommodate persons with MCS in the workplace thus begins the process that effectively strips the patient of a Western identity because of their inability to tolerate the products of Western culture. The worker goes home, if s/he has one, to become part of an invisible disabled population that no longer participates in any of the shared benefits of industrial culture.

Preventable Illness: Preventable Costs

The loss of work is particularly unfortunate, because in the early stages of sensitivity the effects are still reversible (Ashford & Miller, 1998). When sensitivities are first developing, reactions disappear when the person leaves the place of exposure. Considerable resources may be conserved through intervention before the person's symptoms develop into a full-blown disability.

Despite growing evidence that persons are working in unsafe conditions, we have made little effort to improve air quality for American workers. Primary prevention in the workplace should include cleaner working conditions to reduce health risks for all workers. Brown (1994) has suggested a number of possible ways of reducing exposures for sensitive workers including improved ventilation, more effective equipment, protective devices such as respirators or gloves, air cleaners, and scheduling changes to separate the worker from products such as pesticides or paints, and use of safer products.

Few managers of employees are educated about the effects of pesticides or other classes of chemicals. Instead we have relied on Threshold Limit Values (TLVs) set by the Occupational Safety and Health Administration (OSHA) for workplace chemical exposures. But few realize that TLVs were set many years ago, are subject to periodic review and change, and were calculated for healthy, average sized white men (Duehring & Wilson, 1994) in the resting state. Age, gender, and vulnerable health may expose persons to levels of exposure that exceed TLVs for individual chemicals, and chemical mixtures are never even considered when setting exposure limits. Dick (1988) advises that most testing both in lab and the occupational context is done with subjects in the resting state despite the fact that solvent uptake to the CNS is increased by exercise. Implications for exposure in the workplace are that TLVs may not protect workers engaged in physical activity. Hence TLVs are better described as temporary suggested limits for healthy individuals than as absolute safety valves. In fact, Wilson (1993) has

cited studies that show that large numbers of people are harmed by chemicals at or below their TLVs. TLVs may need readjusting to incorporate knowledge regarding their limitations. Good prevention in the workplace may require going beyond TLVs to insure that vulnerable populations are treated accordingly.

Employers rarely make product information available, nor do they inform their employees of the use of toxic substances and materials (Lawson, 1987). Material Safety Data Sheets (MSDS) are required to be on site, and to be delivered within 48 hours to employees who request them for particular chemicals. Yet employees rarely know what chemicals are used in their workplace. In addition, workers do not expect to be exposed to toxins in sites such as offices or schools. Yet employees have a right to be informed of exposure which carry possible health risks.

Education of managers regarding toxins would ideally benefit workers and reduce disparity between research findings and their application in the workplace. For example, solvent exposure accounts for a large portion of work-related complaints and illnesses. Given that solvents are de-fatters or de-greasers, it is not surprising that they are able to impair neurological functioning. The report from the 1990 Conference on Organic Solvents and the Nervous System concluded that solvent-exposed workers were at a higher risk for neuropsychological symptoms, demonstrated lower performance on neurobehavioral tests, and were more likely to receive disability for a neuropsychiatric disorder than were other workers (Baker, 1994). A number of studies have documented neurological sequelae of solvent exposure including difficulties with anxiety and depression, as well as impairments in memory, concentration, abstraction, and reaction time (Moses et al., 1993). Irritability, fatigue, loss of ability to smell, postural difficulties, and reduction of cerebral blood flow may also occur (Baker, 1994). Solvent exposure can slow central nervous system processing and thus cause intellectual deterioration (Bang, 1984). A number of these chemicals show performance detriments at levels at or even

below Threshold Limit Values: 1,1,1-trichloroethane, tetrachloroethylene, acetone, and styrene (Dick, 1988). And we know that injuries from solvents persist or even exacerbate even in the absence of further exposure (Morrow, Ryan, Hodgson, & Robin, 1991; Welsh, Kirshner, Heath, Gilliland, & Broyles, 1991). In addition to perpetuating injuries, solvent exposures may precipitate subtle effects upon well being not generally attributed to solvent exposure. Seeber, Blaszkewicz, Golka, and Kiesswetter (1997) found a dose-effect relationship between solvent exposure and ratings of annoyance and complaints, in both exposure chambers and a factory setting. The implications for general well being in the workplace and beyond are considerable, as exposure levels accounted for 34% of the variance.

Solvents comprise only one class of toxicants for which there is a large body of research identifying negative health effects. Another is pesticides. In spite of the evidence that pesticides are neurotoxic, immunotoxic, and carcinogenic, employees in all types of work are subject to routine chemical spraying.

Considerable amounts of money could be saved by preventing workplace-engendered toxin exposure. Funds that would otherwise go toward health care, worker compensation, disability, clean-up costs, and lawsuits could be better spent in creating safe workplaces. Kassirer and Sandiford (2000) have estimated that between one and three percent of the Canadian population is unemployed due to environmentally-related conditions. Wages for this group would equal over ten billion dollars and contribute over one billion dollars to the tax base. Similarly, Fisk and Rosenfeld have estimated that in the U.S. preventing sick-building could save \$58 billion annually and that improved indoor air could boost worker productivity worth another \$200 billion (cited in "Is Your Office Killing You," 2000). Thus we incur substantial economic loss in addition to disrupting the integrity of the workplace through negatively affecting worker health.

Creating a safe workplace can circumvent the increasing move toward and cost involved in toxic tort as a response to workplace-engendered chemical injury. Plunkett (1993) cites a variety of avenues for pursuing toxic torts for workplace-engendered MCS. Although success is variable depending upon factors such as locale, attorney, judge, jury, and documentation, Plunkett reports that plaintiffs have won cases in most states for Sick Building Syndrome (SBS) or MCS on the basis of negligence, strict liability, breach of contract, express or implied warranties, and fraud and misrepresentation. Corbett (1997) suggests that persons with MCS pursue compensation for a work-related accident rather than an occupational disease in that MCS is not fully recognized as a clinical disease, and the requirements for demonstrating an accident are less stringent than those for occupational disease.

Early intervention in reports of workplace-engendered symptoms would prevent symptom escalation and the ensuing complications discussed earlier in this article. Accommodations where appropriate would prevent the development of full-blown disability and preserve the worker's productivity. In cases where the employee still does not improve or cannot work even with accommodations, compensation for chemical-induced injury should be available just as it is for all other injuries.

Conclusion

Over half of the people who report developing MCS as a result of one chemical exposure place the exposure in the workplace (Gibson et al., 1996). Persons in all occupations, including technical, professional, managerial, clerical, and blue collar, with previous good work records are rendered unable to work long before the age of retirement. On a systemic level, money is spent training people for careers they will never fulfill.

At least two studies document that MCS is a global problem (Ashford et al., 1995; Wilson, 1995), and initial data suggest that the problem is considerable in scope and

growing. Meggs, Dunn, Bloch, Goodman, and Davidoff (1996) found that 33% of a household population sample reported having chemical sensitivity with 3.9% becoming ill every day from exposures. The major chemical incitants were perfume, pesticide, cigarette smoke, and fresh paint, and sensitivities were represented in all age, income, race, and education groups. Two State Department of Health studies support these findings. Both Voorhees (1999) in New Mexico and Kreutzer and Neutra (1996) in California found that 16% of people reported being sensitive to chemicals. Gibson's (2000) research suggests that MCS cuts across professions, and affects large numbers of nurses, professors, clerical workers, teachers, chemists, and photographers.

Consequences for a productive economy and culture, for quality of life among citizens, and for workplace viability are substantial, and may only be cushioned by a serious consideration of workplace environmental quality, attention to individual's reports of health effects from workplace toxicants, and a willingness to reconsider structural aspects of energy-saving buildings, pesticide use, and other risk factors that are compromising worker health.

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