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Cover Page Footnote

The authors thank Joan Bloom, Ph.D. for her critical review and assistance in preparing this paper.

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ABSTRACT

The control of risk behaviors to reduce morbidity and mortality is a leading concern in public health, as is the protection of the public from hazardous exposure to tobacco smoke and fires caused by smoking. Measures to restrict tobacco use are increasingly popular in society and in the workplace as a result. This paper discusses cultural, economic, legal, and ethical factors in the external environment and the organization's institutional and technical environment to predict organizational responses to employee tobacco use.

Opportunities flourish to test this environmental model, as organizations ban tobacco use or institute policies such as discrimination in hiring, cessation programs, and differential health benefits. Organizational responses explained by this model are not limited to the control of tobacco use, but encompass a range of employee risk and wellness behaviors, offering further areas (such as drug abuse) in which this model may be tested.

Although over the last quarter century evidence has accumulated about the dangers of smoking, tobacco use remains the single most important preventable

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cause of morbidity and mortality, responsible for two-thirds of the health care costs among working ages 40–65 years (Rice, et al., 1986). Not only is the worksite a convenient locus for identification, education, and intervention efforts at preventing and reducing the numbers of adult smokers, but employers are aware of the substantial health and non-health costs of tobacco using employees, and are concerned about reducing these costs (Kristein, 1983).

Little is known about the effect of worksite smoking restrictions on overall consumption or prevalence (Gottlieb, et al., 1990); however, Mullooly, et al. (1990) and Gottlieb, et al. (1990) found reductions in workday consumption and less environmental tobacco smoke following restrictive policies. The response by organizational members and clients to worksite tobacco control is only recently being studied as well (Penner, 1989a).

The employer's response to environmental changes regarding tobacco use is used to apply Scott and Meyer's (1983; Meyer, et al., 1983; Scott, 1987:126) typology of technical and institutional organizational environments. It is assumed by the authors that environmental changes (such as new knowledge about the biological effects of smoking) are communicated to organizations, which respond by changing or initiating policies and programs. An organizational model of environmental factors is generated by the authors, based on this theoretical analysis.

The authors' hypothesis is that employee tobacco use policy is largely determined by the organization's response to four external environmental factors. These factors, depicted in Table 1, are legal, economic, cultural, and ethical. Legal factors are based on legislation, regulations and case law pertaining to tobacco use in the workplace. Economic factors include not only the costs of permitting tobacco use among employees, but also the costs of restriction and intervention. Ethical factors encompass the values held by society and the industry of which the organization is a part, while cultural factors are associated with prevailing attitudes regarding tobacco use. Variation in the employer's response also depends on the institutional and technical environments in which the organization is located.

The practical importance of an environmental model lies in its ability to predict specific organizational actions to control and discourage employee smoking. Testing and further refining the model's predictive accuracy would allow organizational researchers to pinpoint those worksite policies most likely to be adopted by specific organizations. Other employee risk behaviors for which organizational responses can be predicted using this model include, but are not limited to, drug and alcohol abuse. The model's utility extends to both organizational consultants and theorists interested in a wide range of organizational settings and employee behaviors the employer may wish to reduce, restrict or change.

Table 1
 Factors in the External Environment That Influence
 Organizational Response to Employee Tobacco Use

<i>LEGAL</i>	<i>ECONOMIC</i>
Federal, state and local laws and regulations pertaining to worksite tobacco use.	Direct and indirect costs of employee tobacco use vs. costs of regulation and intervention.
Collective bargaining and affirmative action requirements.	Industry's perception of the importance of tobacco related costs.
Case law and precedents when tobacco use restriction and intervention policies are challenged.	Technical aspects of the industry affecting safety, productivity and tolerance of tobacco use in the worksite.
	Characteristics of the labor supply vs. the industry's demand for non-tobacco users.
<i>ETHICAL</i>	<i>CULTURAL</i>
Industry's philosophy toward safety, comfort, and wellness of public and employees.	Societal awareness of the harmfulness of exposure to tobacco leading to decreasing tolerance of tobacco use.
Industry's philosophy toward coercive vs. non-coercive tobacco reduction interventions.	Societal attitudes about employee wellness and substance abuse in the workplace.
Distributive justice considerations in bearing the costs of tobacco use.	Industry's history and experiences with substance abuse policies analogous to tobacco restriction and cessation efforts.
Industry's perception of the "slippery slope" dilemma.	

Legal Factors

Legal factors play a significant environmental role by mandating and supporting worksite tobacco use restrictions. In 1976, *Shimp v. New Jersey Bell* became the first legal case to assure an employee's right to protection from involuntary exposure to tobacco smoke (Kristein, 1989), leading to restriction of

smoking in other workplaces. Ten years later, the U.S. Surgeon General urged new restrictions on smoking in public areas based on the dangers of passive smoke inhalation (U.S. Department of Health and Human Services, 1986). This report accelerated the passage of federal, state, and local prohibitions on tobacco consumption, from the 1987 ban of tobacco use by students, staff, and visitors in all the public schools in the state of Kansas, the first state in the nation to do so (Kansas, 1987), to 1989 federal legislation forbidding smoking during domestic air flights.

Case law and legal opinion over the last decade not only provide support for organizations that resist smoking, but also uphold decisions to discriminate against smokers in hiring and health insurance premiums. Among state of Kansas employees, State Attorney General Stephan ruled in 1987 that discrimination against tobacco users is allowed in health plan charges. The basis for Stephan's ruling was that the discount in insurance premiums for which nonsmokers were eligible was viewed as "an incentive for preventative health care . . . to discourage . . . smoking." Differences in health care costs for smokers vs. nonsmokers was held to be a valid distinction in imposing the nonsmokers discount (Penner, 1989a).

Another area of case law addresses the issue of workers classified as handicapped due to hypersensitivity to tobacco smoke. In *Vickers v. Veterans Administration*, an Administration employee filed a suit under the provisions of the Rehabilitation Act of 1973. In *Dep't. of Fair Employment and Housing v. City of Fresno Dep't. of Social Services*, two employees suffered from asthma and sarcoidosis (a chronic lung disease), respectively; both disorders were held to be physical handicaps, and the court ruled that the Department of Social Services must provide "reasonable accommodations" to meet their needs (Scholick, 1989:8).

On the other hand, case law has upheld unions and collective bargaining units when employers have unilaterally restricted smoking without negotiating with their workers. In the 1978 case of *Chemtronics, Inc.* the National Labor Relations Board held that the unilateral decision of the employer to prohibit smoking privileges in the plant area was a violation of labor law "without bargaining with the union representing such employees." The California Public Employee Relations Board ruled in 1988 that the Riverside Unified School District's prohibition of smoking by classified employees in any district facility violated the duty of the district to bargain, basing its conclusion on the finding that a unilateral change in an established practice can be found unlawful (Scholick, 1989:1).

Though not yet tested by case law, another legal question arises regarding whether tobacco use is held to be a voluntary action based on an individual's free choice, or whether tobacco is ruled to be so addictive that the employee is

virtually enslaved by this high-risk habit. If tried in court, coercive or discriminatory measures against employee tobacco users may be found to be "blaming the victim" for biological and societal circumstances beyond his or her control, and it is possible these restrictive measures will not be upheld (Leichter, 1986).

Economic Factors

The economic costs of tobacco use, whether direct, indirect, or intangible, are another significant environmental factor affecting organizations. Kristein (1989) estimates that in 1988 the typical smoking employee generated \$1,000 each year in excess costs. Direct costs include medical care expenses to treat illnesses and accidents directly related to tobacco use, as well as the costs of care for nonsmokers exposed to smoke (Rice, et al., 1986). Replacement and repair of items damaged by cigarette burns and the costs of cleaning and janitorial services are additional direct costs.

Indirect costs also are borne by employers of people who use tobacco. These costs include lost productivity, reduced output, absenteeism and foregone human resources due to morbidity, disability, and mortality resulting from tobacco consumption. Additional indirect costs result when family members of persons suffering the health consequences of tobacco exposure must lose time from work to provide care services (Rice, et al., 1986; Kristein, 1989).

Intangible costs are related to measures of the quality of life rather than money, and generally are excluded from economic calculations. The unpleasant effects of smoke on nonsmokers in the vicinity is one example of an intangible cost of tobacco use, as well as the psychosocial suffering by employees from the tobacco-related disease and death of a co-worker (Manning, et al., 1989; Kristein, 1989).

One intangible cost of employee tobacco use to an organization is the effect on image. For example, organizations promoting health care or wellness as a consumer good (such as health clinics or fitness centers) may find it difficult to convey a desirable image if they do not provide smoke-free surroundings to their customers. As the commitment to cut tobacco use become institutionalized across certain industries, organizations that remain permissive about tobacco use may find it more difficult to compete in the marketplace.

Another dimension in estimating the costs of tobacco use is temporal. Some costs of smoking (such as accidental fires caused by careless disposal of burning cigarettes) occur at the same time the consumption of tobacco takes place. Manning, et al. (1989) estimated the annual property loss from smoking-caused fires at \$340 million (1986 dollars). Other deleterious effects (such as lung cancer) generally occur only after years of tobacco exposure. To the extent that tobacco use results in premature death, foregone future medical care use

and pensions may somewhat offset the higher medical costs associated with smoking (Rice, et al., 1986; Manning, et al., 1989). In terms of preventable disease, premature death and other costs that reduce the Gross National Product, smoking is estimated to cost the U.S. society over \$60 billion annually; however, it is extremely difficult to estimate the costs for an individual employer (Kristein, 1989). Over half of these excess costs are indirect health costs that would be expected to be recoverable in a relatively short time were smoking restriction and cessation programs implemented (Kristein, 1983; Kristein, 1989). Organizational policies to reduce immediate costs of smoking (such as fire danger and damage) require short-term decisions in the organization, but employers must determine whether it is less costly to invest in smoking cessation programs today or pay for employee health problems tomorrow when making long-term decisions about the costs of tobacco use.

For employers concerned about rising health care costs, tobacco use apparently serves as a marker for chemical dependency and psychiatric care utilization. A study of state employee health maintenance organization (HMO) enrollees revealed dramatic differences between tobacco users and nonusers in terms of admissions per 1,000 for chemical dependency (10 vs. 2) and psychiatric disorders (6 vs. 1). In addition, users had far more hospital days per 1,000 for chemical dependency (185 vs. 36) and psychiatric disorders (56 vs. 13). Among relatively younger employees who select HMOs, virtually all of the elevated utilization for tobacco users was due to chemical dependency and psychiatric admissions (Penner, 1989b). These findings not only support other evidence of the higher health care costs of smokers, but provide implications for the identification and screening of employees who abuse drugs.

A study (Penner and Penner, 1990) on fee-for-service plans found tobacco users had significantly higher utilization rates for all types of hospital admissions per 1,000 (124 vs. 76), days per 1,000 (800 vs. 381), longer average length of stay (6.47 vs. 5.03 days), higher average outpatient payments (\$122 vs. \$75) and higher averaged insurance payments (\$1,145 vs. \$762). However, age and sex distributions differed between users and nonusers, and there were no controls for other risk behaviors. Manning, et al. (1989) controlled for these factors and found a significant difference in health care costs between never and ever smokers.

Another issue that affects organizational costs is the nature of the labor market. Catalano, et al. (1986) hypothesized that when the cost of substitution of labor is low for the organization, and the labor market is relatively "slack," workers with lower productivity are more likely to be replaced. In a "tight" labor market the employer's cost of substitution may exceed the value of the added productivity gained by replacement, so less productive and more costly employees are better tolerated by the organization. This hypothesis leads to

the assumption that the added costs of tobacco use among employees is better tolerated by organizations as long as the demand for labor is high. On the other hand, changes in the labor market may spur employers to rethink their policies regarding employees who use tobacco, based on productivity and other economic costs.

Ethical Factors

A 1987 survey found that most companies restrict workplace smoking to protect employee health or comply with government regulations (Gottlieb, et al., 1990) and reasons differ from those given a decade earlier, when safety and productivity were most frequently cited. Some organizations, convinced that smokers use too much sick leave and cause health insurance premiums to rise too high, only hire nonsmokers or penalize smokers via high premiums for health insurance (Crenshaw, 1990). Although some job applicants support this stand, other persons seeking employment have filed complaints about this type of discrimination (Toufexis, 1986). Preferential hiring of nonsmokers poses a threat to affirmative action policies, as sociodemographic studies indicate that tobacco use is more concentrated among minority groups, including blacks (Pierce, 1989; Fiore, 1989). Additional ethical questions arise regarding the organization's role in promoting community health versus the employer's self-interest in "dumping" smokers on other organizations by refusing to hire or insure this population.

Ethical issues related to the restriction of tobacco use in the external environment often revolve around questions of coerciveness, distributive justice and the "slippery slope" dilemma. The boundaries of public jurisdiction over private actions and the lengths to which a governing authority may go to restrict risk behaviors raise concerns about social action for the purpose of health promotion (Leichter, 1986). Non-coercive methods, such as health education, are one way to achieve the objective to individual and social good brought about by improved health. However, when disease prevention efforts result in hiring discrimination or health insurance surcharges, some degree of social coercion exists. Pellegrino (1985) poses the ethical question: under what conditions is organizational coercion a morally defensible alternative?

One defense for the use of coercive response interventions is based on the principle of distributive justice; a smoker engenders costs not only borne by that individual, but by the organization. Costs such as lost productivity, higher insurance premiums and disability payments are shared, not paid solely by the smoker. To some extent, engagement in risk behaviors infringes on the rights of individuals with healthier lifestyles who must help pay for the consequences. The distributive justice perspective lends support to organizational responses such as financial disincentives for smokers (Pellegrino, 1985).

The distributive justice argument becomes more difficult and complicated when other equity issues are brought to light. For example, demographic studies indicate that tobacco use is becoming concentrated among the poor and minority groups. Economic penalties that coercively deal with smoking thus fall most heavily on those persons least equipped to make informed decisions about healthy lifestyles, and least able to pay. Hence, the inequity between classes becomes compounded as the costs of tobacco use are redistributed to fall more heavily upon the perpetrators (McGinnis, 1985).

The "slippery slope" argument proceeds as follows: once organizations mandate a more healthy lifestyle in one aspect of behavior, there is no logical end to this trend (Leichter, 1986). Opponents of discriminatory and prohibitive practices against tobacco users frequently point out the large numbers of persons who are overweight, do not control their blood pressure or cholesterol levels, or who exhibit other risk behaviors. If these persons are not penalized for their lifestyles, is it fair to penalize smokers? Ultimately, an organization's intervention into its employees' personal lifestyles is limited by employee compliance and upon societal perceptions supporting the fairness of that intervention.

A key component of organizational leadership is the role of organizational values. These value decisions are influenced by ethical considerations discussed above, and the industry's response to these issues. For example, a growing number of public schools prohibited not only workplace smoking in many facilities but restrict smoking by anyone, including employees and visitors, within the organization (Kansas, 1987). Values about prevention of smoking among children and youth contributed to this trend.

Cultural Factors

As scientific knowledge of the harmful effects of tobacco increased over recent years, tobacco use in the United States declined substantially in popularity. Twenty-five years ago the U.S. Surgeon General Luther L. Terry first warned the nation about the dangers of smoking. The ensuing quarter century resulted in "dramatic progress" against this health risk, according to the recent U.S. Surgeon General C. Everett Koop, who asserts, "In the 1940s and 1950s, smoking was chic; now, increasingly, it is shunned" (U.S. Department of Health and Human Services, 1989: iii-iv).

A crucial blow to supporters of "smokers rights" is medical evidence that exposure to tobacco smoke causes lung cancer and other diseases in nonsmokers. This finding strengthened the movement to ban smoking in many public areas besides the workplace (U.S. Department of Health and Human Services, 1989). Nonsmokers are more assertive about their objections to tobacco smoke as a

health hazard and an unpleasant nuisance, and attitudes favorable to smoking in public areas continue to decline.

Changing attitudes and understanding about the negative effects of tobacco affect the numbers and demographic characteristics of smokers. For a number of years, smoking prevalence has declined in the United States, but certain subgroups of the population show increased prevalence. Among young women who do not go beyond a high school education, smoking increased from about 39 percent in 1974 to 44 percent in 1985 (Pierce, et al., 1989). Rates of smoking among blacks are now higher than whites. As of 1985, smoking prevalence for blacks is 35.4 percent vs. 29.4 percent for whites, while the quit ratio (proportion of ever smokers who are former smokers) for blacks is only 32.9 percent vs. 47.1 percent for whites (Fiore, et al., 1989:51). Cigarette smoking now reflects class divisions, being more concentrated among the working class and poor. The influence of class is reinforced by studies indicating that educational level (a marker for socioeconomic status) is an even better predictor of smoking than gender or race (Pierce, et al., 1989).

Cultural change reduced the acceptability of tobacco use, especially in public places, and led to organizational responses due to pressure from nonsmokers and customers for smoking prohibitions. At the same time, the attitudes about health promotion emphasizing personal responsibility for disease prevention became a part of American cultural values and endorsed organizational efforts to reduce smoking in the workplace.

In summary, the impact of a changing environment vis-à-vis tobacco use influences organizations based on cultural, economic, legal, and ethical factors. Organizations respond in different ways to these factors, leading to a variety of outcomes. For example, changing cultural attitudes about the harmful effects of exposure to smoke led to legal restriction of smoking in the workplace, based on ethical concerns for the rights of nonsmokers. Soaring economic costs of health care and health insurance coverage spur employers to screen out high-cost, high-risk employees, particularly if the labor substitution costs are low.

An Organizational Model

Although Figure 1 depicts many of the interrelated factors associated with employer responses to employee tobacco use, these environmental factors merely describe events and issues, but do not explain the development of policies or interventions. A testable model based on these environmental factors would be far more useful, providing explanation as well as description. Given the current attention on other areas of employee risk behavior such as drug abuse (Verespej, 1988), a model that could be generalized and applied to employee risk behaviors other than tobacco use would be even more beneficial to organizational research.

The organizational model proposed in this paper is based on a typology developed by Scott and Meyer (1983; Meyer, et al., 1983; Scott, 1987:126), who classified various types of organizations based on the relative strength or weakness of their institutional and technical sectors. The choice of Scott and Meyer's typology to analyze employee smoking policies was due to the scope of its explanatory power and its generalizability to other employee risk behaviors. The model's scope arises from its technical and institutional dimensions, while the continuous nature of the technical and institutional variables increases the model's generalizability.

Technical activities such as markets, resources, tasks, and competition have most frequently been conceptualized as the organization's environment. Institutional analysis takes elements overlooked by the technical perspective, such as culture, norms, and professional and regulatory policies into account as well (Scott, 1987). Scott and Meyer (1983; Meyer, et al., 1983; Scott, 1987) define the institutional sector as characterized by rules and requirements to which organizations must conform if they are to obtain support and legitimacy from the environment. By contrast, the technical sector concerns the exchange of goods or services in a market. Technical organizations are rewarded for effective and efficient productivity; institutional organizations are rewarded for meeting government or professional requirements.

Although Scott and Meyer present a dichotomous description of technical and institutional sectors, these dimensions are actually viewed as separate and continuous variables. An organization may be high or low on both the technical and institutional sectors, or high on one and low on the other. Scott and Meyer's treatment of technical and institutional variables as continuous rather than dichotomous allows the researcher to examine organizations which cannot be classified as purely technical or institutional. As a result, this environmental model is generalizable because it can be applied to a wide range of organizations that serve as employers. Employee risk behavior is assumed to be part of the organizational environment, and the organization's response is predicted to vary given its location in the technical and institutional sectors. Tobacco use is only one example of employee risk behavior that is relevant to employers; applications to drug abuse and other risk behaviors abound. Generalizability is particularly useful to organizational researchers as it enables them to analyze an entire range of health and wellness costs and responses either separately or in their entirety.

The authors believe that the four environmental factors (legal, economic, cultural, and ethical) affect the organization's response differently as the technical and institutional settings vary. For example, the lack of definitive institutional constraints on employee smoking in a highly technical setting result

in the increased dominance of economic and cultural factors. If law and regulation (predominant in institutional settings) do not prescribe specific actions, costs and preferences exert greater influence in guiding decisions at all levels in the organization. Americans have accepted public smoking restrictions, devalued smoking as a social act, and supported their own and others' attempts at tobacco cessation. These trends have certainly influenced the leadership of organizations toward smoking restrictions where the health of nonsmokers may be at risk. Cultural trends are not strong, however, concerning the need for employers to provide cessation programs (Gottlieb, et al., 1990).

When the technical sector is weak, legal and ethical factors predominate. Among highly institutional organizations, compliance with industry values and government regulation determines survival rather than profits. There are legal and ethical reasons to prohibit workplace smoking in public areas, based on health hazards associated with this risk behavior. Ethical and legal considerations also encourage (and in some cases mandate) the provision of voluntary cessation programs to help employees overcome a difficult addiction.

Although Scott and Meyer (1983) focused on the classification of organizations, this paper extends their typology to incorporate the four environmental factors proposed by the authors. The authors propose a model of external environmental factors that influence organizations located in each of the technical and institutional sectors. The relationship of these four factors is shown in Table 2.

Table 2
Environmental Model and Typology of External Factors Influencing
Selected Organizations within Technical and Institutional Sectors

		INSTITUTIONAL SECTOR	
		HIGH	LOW
TECHNICAL		LEGAL/ECONOMIC:	ECONOMIC/CULTURAL:
		Utilities	Factories
		Banks	Retail trade
		Hospitals	
	Transportation		
SECTOR		ETHICAL/LEGAL:	CULTURAL/ETHICAL:
		Schools	Restaurants
		Religious groups	Health clubs

The first combination of factors, depicted in the upper left quadrant, is characteristic of organizations that are both highly technical and highly institutional. One dominant factor is legal, the other is economic, as organizational policies and practices rest both upon following law and regulations and upon the need for productivity. One example of this type of organization is the hospital, which is affected by accreditation standards and other institutional pressures, and also provides health care services sold in the marketplace, in which technical equipment and expertise are essential for production and image (Scott and Meyer, 1983).

The opposite extreme is the organization that is low on both the technical and institutional scales, in which the dominant environmental factors are cultural and ethical, as shown in the bottom right quadrant of Table 2. Changing public attitudes that affect the environment are different and distinct from formal rules and regulations (Meyer and Rowan, 1983). Restaurants, with few formal regulations other than sanitation and food safety, as well as little emphasis on technology (Scott and Meyer, 1983), are highly attuned to cultural changes, such as the objection of nonsmokers to exposure to tobacco smoke while dining. Nonsmoking customers are so numerous and assertive that restaurants may prohibit smoking altogether, or restrict it to designated areas.

The high technical, low institutional organization is affected primarily by economic and cultural factors. Organizations such as factories engaged in general manufacturing are typical of this sector (Scott and Meyer, 1983), shown in the top right quadrant of Table 2. The competitive production of goods or services is important to these organizations, leading them to employ technology to enhance efficiency, but cultural factors that influence employee social behaviors are also significant. The low technical, high institutional organization such as the public school (Scott and Meyer, 1983), depicted in the bottom left quadrant, is predominantly influenced by legal and ethical factors.

Table 3 further amplifies this model in the context of the organization's expected response to employee tobacco use. High technical and institutional organizations strongly influenced by legal and economic factors would be expected to develop restrictive policies on tobacco use throughout all organizational settings, including administrative offices and lobbies, not just in certain worksites where costs of fire or lost productivity lead to smoking prohibitions. Such organizations are subject to industry and governmental mandates discouraging tobacco use. The economic costs of tobacco use are perceived by these organizations as significant and important to reduce. Moreover, tobacco use would be perceived as detrimental to the organization's image, as in the case of hospitals.

Cessation programs would be provided to further employee compliance with these rules, to cut costs associated with tobacco use, and as part of a collective

Table 3
 Environmental Model and Typology of External Factors Influencing
 Selected Organizational Policies within Technical and Institutional Sectors

		INSTITUTIONAL SECTOR		
		HIGH	LOW	
TECHNICAL	HIGH	LEGAL/ECONOMIC: Restrictive policies in all organizational settings based on mandates and image. Cessation programs mandated by law, industry guidelines or collective bargaining agreements. Discrimination against tobacco users as laws, unions, industry guidelines, and the labor market permit.	ECONOMIC/CULTURAL: Restrictive policies in the work-site when safety, productivity or consumer attitude is of concern. Cessation programs motivated by cost concerns and employee interest. Discrimination against tobacco users when these policies reduce costs and the supply of labor exceeds organizational demand.	
	LOW	ETHICAL/LEGAL: Restrictive policies primarily motivated by welfare concerns such as exposure of children, and influenced by legal implications. Cessation programs rooted in organizational history of paternalism. Discrimination against tobacco using employees limited to non-coercive approaches such as educational programs.	CULTURAL/ETHICAL: Restrictive policies motivated by employee and consumer preferences, supported by welfare concerns. Cessation programs provided due to employee interest. Discrimination against tobacco users based on attitudes and values and limited to non-coercive approaches.	
	SECTOR			

bargaining agreement in exchange for worksite smoking prohibitions. Discrimination against tobacco users in hiring or health insurance surcharges would occur only as permitted by unions and industry guidelines. However, in cases in which smoking is clearly a risk factor for occupational disease (such as lung cancer among asbestos workers) or in which the labor market is "slack" (such as nursing assistants) the organization would have economic incentives to discriminate based on tobacco use.

Organizations with low institutional and technical pressures, influenced predominantly by cultural and ethical factors, would be expected to respond quite differently to employee tobacco use. Restrictive policies would mainly arise from requests by nonsmoking employees and consumers, supported by ethical concerns about nonsmokers and cultural attitudes about the undesirability of tobacco smoke. Cessation programs would be provided as a "bottom-up" organizational response based on employee interest, not as a "top-down" regulatory mandate. Smoking policies would be non-coercive, such as allowing worksite smoking in designated areas and health education about the risks of tobacco.

Organizations high on the technical scale and low on the institutional scale would be dominated by economic and cultural factors. Restrictive tobacco use policies would be enforced in worksites where tobacco's effects on safety, productivity or consumer comfort would be of concern. Depending on the characteristics of the labor market, restrictions might be increased to discourage hiring or to penalize smokers, in order to reduce costs. In setting restrictions, the cultural norms of the organization would tend to prevail, for example, in a petroleum refinery where workers may not smoke in flammable chemical storage areas but are allowed to smoke in their own offices if they desire. Cessation programs would be implemented as a way to cut health costs and improve worker productivity, and to some extent to recruit and retain employees, not out of legal or ethical concerns. Discrimination against tobacco users would be driven by the economic costs of restrictive versus permissive interventions, and by the preferences of employees and customers.

Finally, organizations in the high institutional and low technical sector would be largely influenced by ethical and legal factors. These organizations would tend to be more altruistic and paternalistic, restricting tobacco use out of concern for employee welfare and as an expression of organizational values, such as teachers not permitted to smoke in public work areas as they are expected to set an example for their students. Cessation programs would be rooted in an organizational tradition of paternalism, included with other health education and self-improvement strategies. Discrimination against tobacco use would be non-coercive due to concerns about equity and fairness.

The model portrayed in Table 3 may be applied and tested to predict organizational responses to changing environmental influences regarding tobacco use. Although not every organization is expected to alter its responses based solely on institutional or technical sector characteristics, one could establish objective measures of selected responses and test how well the model predicts organizational responses. Competing and contradictory factors that complicate organizational responses could be explained.

For example, the commitment to a smoke-free worksite endorsed by the hospital industry is contradicted by the industry's tolerance of high rates of smoking among nurses. This contradictory behavior may be related to their location in the environmental model, so that although hospitals have incentives to reduce and even eliminate smoking across the entire organization, the shortage of professional nurses in the labor market (and their ability to form unions) limits the implementation of a comprehensive smoking ban. For the same reasons, hospitals would find it difficult to penalize employee smokers by charging them higher premiums for health insurance, due to collective bargaining (legal) and labor market (economic) constraints.

Economic, cultural, legal, and ethical factors could be identified and either quantitatively or qualitatively measured in terms of impact on the organization. In the above example, objective measures would include the shortage or surplus of nurses in the labor market, the existence and types of smoking policies the hospital chooses to enforce, and the presence of collective bargaining agreements.

As discussed earlier, this model is suitable for application to other employee risk behaviors and interventions, such as employee drug abuse. Organizational responses range from pre-employment, random or "for-cause" (suspected abuse) drug testing to employer-provided health insurance coverage for substance abuse and voluntary or mandatory employee assistance programs. High technical and institutional organizations must limit costs to remain competitive, and are also heavily regulated. These organizations (such as banks or utility companies) would be expected to act aggressively to discourage employee substance abuse through pre-employment and "for-cause" drug testing, but would not perform random drug testing except where allowed or required by law. Health insurance coverage for substance abuse would be limited to applicable governmental regulations or collective bargaining agreements (as this coverage is costly), but participation in employee assisted programs would be required for those suspected of abuse. As in the case of tobacco use, predictions can be made for organizations located in each of the four sectors of the model, and tested to determine whether the expected organizational response conforms to its actual policies about employee drug abuse.

Conclusion

The control of risk behaviors to reduce morbidity and mortality is a leading concern in public health, as is the protection of the public from hazardous exposure to tobacco smoke and fires caused by smoking. Disease prevention movements to restrict tobacco use are increasingly popular in society and in the workplace as a result. This paper discussed cultural, economic, legal, and ethical factors in the external environment and the organization's institutional and technical environment to predict organizational responses to employee tobacco use.

Opportunities to test this environmental model are abundant as organizations ban tobacco use altogether or institute a variety of other policies such as discrimination in hiring, differential health benefits for smokers and nonsmokers, cessation programs, and other employee incentives and disincentives. Organizational responses targeting employee risk behaviors are not limited to tobacco use, but extend to the abuse of alcohol and illicit drugs, and areas of wellness such as obesity, physical fitness, and blood pressure control. Models that explain and predict employer responses in the context of environmental influences contribute to organizational theory and research.

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