Burnout in Public Agencies: Worldwide, How Many Employees Have Which Degrees Of Burnout, and With What Consequences?

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Abstract

Numerous studies using an 8-phase model of burnout suggest its validity and reliability as an operational definition, and this paper summarizes public-sector findings in 33 U.S., Canadian, and worldwide worksettings. The findings fall in three major categories. First, a large number of marker variables map on the phases in regular and robust ways, with conditions deteriorating on almost all variables, phase by phase. Second, the incidences of advanced phases also vary in numerous populations, but high burnout appears almost everywhere in surprising (even startling) proportions. Third, burnout in the U.S. public-sector is not appreciably worse than in business. Major implications of phase model findings for public management also are detailed, and they reflect major challenges that will have to be dealt with in order to achieve the status of a model employer.

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The phase model of burnout (Golembiewski, Boudreau, Munzenrider, & Luo, 1996) seems a valid and reliable operational measure, both in North America and abroad, and for the first time permits reasonable estimates of the incidence of this modern disease (Newton, 1995). Basically, this paper seeks to place in reasonable perspective the role of burnout in public work, in 13 U.S. worksites, in 11 Canadian sites, and in 9 global studies ranging from China to Taiwan. For limited purposes, comparisons of the pub-sector incidences of the phases also will be made with two panels of non-public worksettings -- 63 in North America and 9 global worksettings.

This review has four major components. In turn, this paper describes the phase model; it reports on a consistent pattern of covariants of the phases to establish the reliability and validity of the phase model; and this paper also begins the job of estimating how many people have which degrees of burnout in public-sector organizations, in the U.S. and worldwide, with some comparisons with the business sector. Beyond that, the paper details a number of implications of the phase model for the practice of public management.

Sketch of Phase Model

The phase model differs from those numerous operational definitions used to estimate stress or strain by focusing on the number and severity of stressors at work. Rather, the phase model focuses on the ways individuals experience whatever stressors they encounter, and that differences seems consequential.

Our[1] approach builds on two common observations. Individuals differ widely as to the acceptable number and intensity of stressors -- not only between people at any one time, but also at different points in time for any person. Moreover, one level of stressors can be energizing and motivating for one person, while it herniates others. How to take these basic observations into account? Directly, the phase model focuses on the question: Are the stressors one now experiences too much, whatever their number and severity?

1. MBI Items and Sub-Domains. Specifically, the phase model builds on the items in the original three sub-domains of the Maslach Burnout Inventory, or MBI (Maslach & Jackson, 1982, 1986), while in several significant particulars the model also transcends those sub-domains as well as the items used to estimate them. Basically, in effect, a simple paper-and pencil instrument asks respondents: How are things at work, relative to your comfortable coping attitudes and skills? And the responses to a 7-point rating scale assess how much each item is (1) like → (7) unlike the respondent, and this permits characterizing each individual on three sub-domains:

o Depersonalization, where high scores indicate a marked tendency to think of others as things or objects, to distance self from others;

o Personal Accomplishment (Reversed), where low scores indicate a person who reports doing well on a worthwhile job; and

o Emotional Exhaustion, where high scores indicate people who are at or beyond their comfortable coping limits, as in estimating how close each individual is to the "end of the rope" in emotional terms.

The phase model builds on these three sub-domains, and assumes they are progressively virulent in the order given. High or Low assignments for each individual on each sub-domain are made in terms of "universal norms" derived from a large population of federal employees operating under considerable stressors (Golembiewski & Munzenrider, 1988, pp. 27-28). Other users of the phase model rely on different cutting-points, usually the specific medians on the three MBI sub-domains from each specific population (e.g., Burke, Shearer, & Deszca, 1984). These "local norms" may prove the correct convention, but the evidence does not support such a view, overall (Golembiewski, Boudreau, Munzenrider, & Luo, 1996).

Interpretively, high Emotional Exhaustion contributes more to burnout than high Personal Accomplishment (Reversed). Moreover, both are seen as more virulent than high Depersonalization. Simple operations permit developing an 8-phase model of progressively-virulent burnout, which takes the form depicted in Figure 1.

Figure 1.
Phase Model of Burnout

PHASES OF BURNOUT

	I	II	III	IV	V	VI	VII	VIII
Depresonalization	Lo	Hi	Lo	Hi	Lo	Hi	Lo	Hi
Personal Accomplishment (REVERSED)	Lo	Lo	Hi	Hi	Lo	Lo	Hi	Hi
Emotional Exhaustion	Lo	Lo	Lo	Lo	Hi	Hi	Hi	Hi

Although the notion of "phases" may encourage a contrary view, the phase model does not require that an individual proceed in order through each phase to highest burnout. Indeed, that is psychologically difficult or even impossible, as consideration of a possible II → III movement illustrates. Rather, the phases are differentially virulent I → VIII, however and whenever one arrives at a particular phase. If the model works, then, those persons assigned to Phase I should exhibit fewer deficits or deficiencies in a broad range of marker variables than those in Phase II who, in turn, should be better off than those in Phase III, and so on.

Onset of advanced phases can be either chronic or acute, following medical usage. The single chronic flightpath through the phases is I → II → IV → VIII. Interpretively, High Depersonalization deprives an individual of important information, which over time can impede performance on task, and these two conditions then can eventuate in that level of strain beyond the individual's comfortable coping capabilities reasonably labelled "emotional exhaustion."

In contrast, acute onset can take several flightpaths, depending upon the stimulating

trauma -- e.g., a new boss, a corporate merger, a poor performance appraisal, a death, and so on. Commonly, however, acute flightpaths will feature a High assignment on Emotional Exhaustion. Hence, in acute onset, one should routinely observe I → V or II → VI or perhaps II → VIII. A reference to Figure 1 will help the reader visualize acute flightpaths.

Summary of Covariants of Phases

The phases seem to measure a central feature of organizational life. As numerous replications establish, the degrees of burnout map in expected ways on virtually every one of several hundred covariants studied so far, both in North America (e.g., Golembiewski & Munzenrider, 1988) as well as in global worksettings (Golembiewski, Boudreau, Munzenrider, & Luo, 1996). Obviously, this is consistent with the conceptual expectation that, given a workable operational definition, a broad range of indicators of personal and collective functioning will decrease or deteriorate, phase by progressive phase. To illustrate, the following variables have shown -- typically in several replications -- the expected pattern of covariation. As the phases progress I → VIII:

o   job involvement and all facets of job satisfaction decrease
o   turnover increases, both in intent and in actual departures
o   group cohesiveness decreases
o   physical and emotional symptoms increase
o   features of family life deteriorate
o   indicators of performance fall
o   use of medical insurance increases

And so on through a long inventory of indicators of the character and quality of individual and collective functioning.

Tables 1 and 2 suggest the magnitude of the associations of the phases with a robust covariant -- Total Physical Symptoms (Quinn & Stines, 1979) -- as reported by over 1500 respondents from a division of a federal agency. Clearly, overall, ANOVA

Table 1.
Means, Total Physical Symptoms by Phases of Burnout, ANOVA, N = 1,535.

| | Phases of Burnout | | | | | | | | |
Total Physical Symptoms X Phases	I	II	III	IV	V	VI	VII	VIII	F-ratio
	33.5	34.2	33.9	35.5	38.7	40.1	40.5	42.6	39.628*

* P < .000.

indicates that the distribution of mean scores is almost certainly non-random. Table 2's micro-analysis -- Total Symptoms arrayed by all possible pairs of phases -- reinforces this overall perspective. In sum, nearly every paired-comparison falls in the expected direction -- that is, mean Physical Symptoms are lower for those respondents in Phase I than in II, lower for IIs than for IIIs, and so on. The magnitudes of the associations in Table 2 are substantial, as is implicit in the fact that 5 of every 100 statistically significant paired-comparisons falling in the expected direction can be expected due to chance factors. In sharp contrast, Table 2 shows that over 6 in every 10 paired-comparisons achieve $P \geq .05$ as well as fall in the expected direction. Obviously, non-random factors are at work. The Least Significant Difference (LSD)) test, as modified for unequal sub-samples, is used to estimate the statistical significance of differences between paired-comparisons.

Table 2.
Summary, Total Physical Symptoms X Phases,
All Paired-Comparisons by LSD Test (Modified), N = 1,535.

In Expected Direction	In Expected Direction and Statistically Significant	In Contrary Direction	In Contrary Direction and Statistically Significant
96.4	60.4	3.6	0.0

The association of the phases with health status is robust, patently, and the results are quite similar for several ways of aggregating Symptoms scores. Thus, each of the 19 individual Symptoms also were analyzed, as were the three factorial clusterings of those Symptoms (Golembiewski & Munzenrider, 1988, esp. pp. 68-77). All 22 arrays map on the phases in the expected ways. In addition, indicators of emotional health have a similar pattern of covariation with the phases (e.g., Golembiewski, Scherb, Lloyd, & Munzenrider, 1992; Aldinger, 1993).

Significantly, when compared to randomly-assembled national populations, persons in advanced phases report 5 to 15-fold multiples of all symptoms measures, while people in Phases I-III report a fraction of the symptomology (Golembiewski & Munzenrider, 1988, pp. 75-77). In sum, advanced phases imply bad news.

The record with physical symptoms represents no statistical fluke. Rather, the similar robustness and regularity of these and other covariants of the phases are, in a word, remarkable. Table 3 supports this central generalization by summarizing studies from two major geographic loci. Many of the variables come from a "standard replication package" which includes 6 basic measures -- self-rated productivity, job involvement, job tension at

work, the General Health Questionnaire, helplessness, and job satisfaction.

Table 3.
Summary, Marker Variables X Phases
In Public-Sector Organizations, U.S. and Global.

		Paired-comparisons, in %			
Marker Variables X Phases, Statistically Significant by ANOVA		In Expected Direction	In Expected Direction and Statistically significant	In Contrary Direction	In Contrary Direction and Statistically Significant
A. North American + Public-Sector Worksites	79 of 87, or 90.8 percent	83.1%	23.9%	16.9%	0.6%
B. Global Public-Sector Worksites §	28 of 28, or 100 precent	81.3%	25.1%	18.8%	1.5%

+ Includes U.S. 1, 3, 4, 5, 6, 7, 8, 12, and 13, as well as Canada 9, from Appendix A, Parts I and II.

§ Includes China B, Ghana A, Japan C, Saudi Arabia , Taiwan A, and Taiwan B from Appendix A, Part III.

Table 3 permits easy interpretive summary. For public agencies in both North America and global settings, phase by phase, large proportions of the covariants track in expected ways. These "expected ways" involve achieving $P \leq$ .05 on overall ANOVA, overall, as well as by achieving on paired-comparisons of the several marker variables. As noted, 1-in-20 cases of non-random variation can be expected by chance. Hence, the pattern in Table 3 is quite pronounced. Note also that the summary data for all business worksettings, not reported here to conserve space, would reflect little difference from Table 3.

Estimating Global Incidences of Phases

Were the advanced phases lightly represented in nature, Table 3 would have less-distressing implications, but the news about phase distributions is not good, overall -- pretty bad almost everywhere we have looked, and worse in some places. That "bad news" may even be optimistic because our data may come disproportionately from worksites with relatively-positive incidences of advanced phases, given the reasonable guess that hosts of

burnout research may be among the "better" employers.

In any case, the evidence about incidence requires no interpretive subtlety. Tables 4-6 reflect distributions of burnout phases that range from high to alarming. These three tables add a major dimension to the virulence of the consequences of advanced burnout implied by Tables 1-3: many people, surveyed at over 80 worksites around the world, are assigned to advanced phases of burnout.

Table 4.

Incidences of Phases, 13 U.S. Public Sector vs. 63 North American Settings.

	Incidences of Phases, in N/%							
	I	II	III	IV	V	VI	VII	VIII
Summary, Incidence	1544	417	584	325	723	947	473	1413
of Phases in 13	24.0%	6.5	9.1	5.1	11.3	14.7	7.4	22.0
U.S. Public-Sector								
Worksites (N = 6,426)								
		39.6%					44.1%	
Summary, Incidence +								
of Phases in 63	25.0%	6.0	12.8	8.4	6.8	12.8	7.9	20.2
North American								
Worksites (N = 24,080)								
		43.8%					40.9%	

+ Gloembiewski, Boudreau, Munzenrider, & Luo, 1996, Chapter 6.

Several points usefully fine-tune this overall conclusion about the pandemic incidence of the phases, worldwide, in both public and business organizations. First, most observers will agree that the proportions of assignments to the advanced phases are "high" in all three tables. That is not good news. All incidences of advanced phases fall well beyond the general guidelines for "epidemic" proportions, and the term "pandemic" does not seem an overstatement. Specifically, Phases VI - VIII contain a 41.8 percent of all respondents in Canadian public-sector worksites, 44.1 percent in the U.S. sites, and 60.0 percent in the 9 available global public-sector worksites.

Table 5.
Incidences of Phases, Canadian Settings vs. North American Worksites.

	Incidences of Phases, in N/%							
	I	II	III	IV	V	VI	VII	VIII
Summary, Incidence of Phases in 11 Canadian Public-Sector Worksites (N = 3,230)	713 22.1%	202 6.3	496 15.4	224 6.9	248 7.7	316 9.8	231 7.2	800 24.8
		43.8%					41.8%	
Summary, Incidence of Phases in 63 North American Non-Public Worksites (N = 24,080)	25.0%	6.0	12.8	8.4	6.8	12.8	7.9	20.2
		43.8%					40.9%	

Second, public-sector employees seem to be at a disadvantage in all three geographic settings, when it comes to the proportion of advanced burnout assignments. The comparison is most disadvantageous in Table 6, with Canadian and U.S. public-sector distributions suffering only a bit in their comparisons with available non-public worksites. That is, all available North American worksites include 40.9 percent assignees to Phases VI - VIII, compared with 44.1 percent for U.S. public-sector worksites and, 41.8 percent for their Canadian counterparts. That corresponding global contrast in Table 6 is shocking: 44.0 percent overall vs. 60.0 percent for the public sector.

Third, there seems little to choose between the U.S. and Canadian incidences. This is consistent with the sense of a shared and open border, the penetration of U.S. media and culture into Canada, pervasive cross-migrations, and mutual roles as largest trading partners.

Table 6.

Incidences of Phases, 18 Global Worksites.

		Incidences of Phases, in N/%							
		I	II	III	IV	V	VI	VII	VIII
Summary, Incidence	+	399	192	285	489	259	535	197	1697
of Phases in 9		9.9%	4.7	7.0	12.1	6.4	13.2	4.9	41.9
Global Public-									
Sector Worksites									
(N = 4,053)			21.6%					60.0%	
Summary, Incidence	§	179	119	491	403	65	159	109	716
of Phases in 9		8.0%	5.3	21.9	18.0	2.9	7.1	4.9	32.0
Global Non-Public									
Worksites									
(N = 2,241)			35.2%					44.0%	

+ From Appendix A, Part III.

§ From Golembiewski & Munzenrider, 1988.

Fourth, the distributions of phases are bi-polar, in general and in almost every individual case. Table 7 illustrates this for U.S. public-sector organizations. Almost 84 percent of all phase I-III assignees are in organizations having 20-50 percent of their employees in the three least-advanced phases. The pattern is more pronounced for Phase VI-VIII assignments by organizations. Over 87 percent of all assignments to those three most-advanced phases come from 8 organizations having 40 percent or more of their employees in those three extreme phases.

Relatedly, Phases IV and V seem sparsely populated, as Tables 4-6 show. Theoretical and practical reasons support this view of burnout as clustering at the extremes, with few cases in the intermediate phases. Details are beyond the scope of this article but, to illustrate, note that Phase IV is on the chronic flightpath of burnout -- I ---> II ---> IV ---> VIII -- and persistence data imply that IV is a short-lived status on the way to maximum burnout (Golembiewski, Boudreau, Munzenrider, & Luo, 1996).

Table 7.

Distributions of Extreme Clusters of Phases in 13 U.S. Public-Sector Populations, by Individuals and Organizations.

No. of Organizations in Phases I -III	% of All Phases I -III Assignees	Percentage Intervals	% of All Phases VI-VIII Assignees	No. of Organizations in Phases VI-VIII
3	40.0	20-29.9%	6.9	4
0	0.0	30-39.9%	5.9	1
6	43.7	40-49.9%	67.0	7
3	7.9	50-50.9%	20.2	1
1	8.4	60-60.9%	0.0	0

Highlighting Implications of Phases for Public Management

The findings associated with the phase model have major implications for the theory as well as practice of public management. A small sampler -- nine exemplars, to be specific -- suggests the far-broader range of these implications.

First, and in many senses paramountly, the phase model seems a valid and reliable operational definition. Measurement details beyond the scope of this article require some caveats (Golembiewski, Boudreau, Munzenrider, & Luo, 1996), but the available estimates of the virulence and incidence of the phases must be taken seriously. The numerous replications of the concurrent validity provide no support for the proposition that random effects only are at work in phase findings.

Second, the phase model provides room for both those who believe in culture-bounded research as well as for those searching for general (if not necessarily universal) principles. In sum, there is substance in the phase model for both of the two basic orientations to Public Administration -- the early search for universal principles, as well as the more recent concern with contingency approaches.

Let us be more specific. Thus, the same pattern of covariants of the phases seems dominant in public agencies, wherever they are located, as Table 3 shows. The same pattern also exists in business organizations, again wherever they are located (Golembiewski, Boudrean, Munzenrider, & Luo, 1996). In short, the generic features do not seem camouflaged by cultural-specificities, which can include differences between organizational sub-cultures as well as differences between regional or national cultures.

Third, numerous popular models predict that public-sector employees should be at a significant disadvantage in virtually all particulars related to work. Rainey (1991) reviews much of the relevant literature, and highlights its one-time-centrality in Public Administration.

Conclusions should not be forced at this early time, but no major public-sector

disadvantage appears in the burnout data for US or Canadian worksites. Thus, Table 4 shows only a small advantage for non-public worksites in the proportions of Phases I-III. In addition, both US an Canadian public-sector worksite are far more attractive than the global incidences in Table 6.

Fourth, in my early years as a student, the federal government was known as the model employer, and a number of state and local jurisdictions also had substantial reputations. What is the relevance of the burnout data for regaining this status? All data above come to a single point: regaining substantial proportions of that lost status will require doing major proactive somethings about the record concerning burnout. This is the case in US public-sector populations, and even mores for global exemplars.

Despite the popularity of the associated argument, there is little consolation in two facts: that the conditions seem considerably worse in non-North American public-sector organizations; and that business organizations seem similarly afflicted with burnout, despite the advantages that many observers attribute to them nowadays.

Fifth, if for no other reason, reducing the distribution of advanced phases seems reasonable in terms of dollars-and-sense. To suggest the point, witness the direct associations of the phases with turnover and the use of medical insurance (Jackson & Manning, 1996). Other consistent covariants of the advanced phases reinforce this conclusion -- low satisfaction, low job involvement, high turnover, low performance appraisals, and so on.

Sixth, extensions from existing findings and some direct empirical tests support the elemental point that improvements in burnout may be a necessary prelude to change that is not prohibitively expensive, in the short-term but especially in the long-run (e.g., Golembiewski, & Rountree, 1996a, 1996b). That is to say, the dour covariants of the phases suggest dangerously-polluted worksites. In turn, this condition implies that efforts to heighten effectiveness will be compromised, if things do not in fact spiral out-of-reach, in the absence of prior efforts to ameliorate burnout.

Directly, absent amelioration of burnout, the stage seems set for the tragic game of not being able' to win for losing. Consider here only that the success of various popular initiatives -- including re-engineering as well as down-sizing.and right-sizing -- reasonably seem to require low burnout. This generalization applies coming and going, as it were. Thus, a high incidence of advanced phases seems likely to complicate implementing such initiatives; and implementing these initiatives also likely will add to the incidence of those in advanced phases by further stimulating those already likely to be over-stimulated. Absent real inventiveness re burnout, those two probabilities suggest a game one cannot win for losing. This probability implies a powerful lesson for such initiatives as the Volcker Commission recommendations or the National Performance Review of the Clinton/Gore administration.

Seventh, the phases do a useful double-duty. In sum, burnout constitutes a central measure of the human and system costs associated with work, as well as a conceptual guide for doing something to ameliorate those consequences. Consider only the latter point. In

sum, the phases imply appropriate ameliorative interventions. Thus, Phase II assignees would profit from interventions that improve interaction -- e.g., climates, listening skills, and giving effective feedback. Relatedly, those in Phase III would profit from various approaches related to task -- job rotation, job enrichment, and autonomous teams, among others.

Eighth, to be direct, the amelioration of burnout is <u>not</u> out of reach. The phase model not only can serve diagnosis as a valid and reliable instrument for measuring burnout. Moreover, designs consistent with the phase model to ameliorate burnout have been tested successfully, relying on the considerable experience with value-loaded OD interventions (e.g., Golembiewski, Hilles, & Daly, 1987; Golembiewski & Rountree, 1996a, 1996b).

If anything, these dual capabilities of the phase model are more necessary in the public sector. Both here and abroad, the crescendoing reforms of public management have much in common (e.g., Peters, 1994), for both good and ill. Moreover, the heightening of burnout seems a likely outcome of those reforms, both here and abroad, given that burnout is already high in all public loci, and especially in the global panel. Better data about the distribution of global burnout phases may require some fine-tuning of this generalization, but no rejection seems appropriate.

Ninth, developmental work on the phase model provides important guidance for reformers of management. Consider here only two related implications of phase model findings. Thus, phase research highlights the relevance of the "immediate work group" -- that is, the group of first-reports such as a CEO and vice-presidents, or an executive plus the middle managers reporting directly to him/her. Specifically, the best predicator of the burnout levels of an entire group of first-reports is the phase of <u>any</u> single member. That is, immediate work groups seem to have an affinity for extreme scorers -- e.g., mostly I-III <u>or</u> VI-VIII, but not mixes of both. Processes of selection, socialization, resonance, and so on seem to encourage burnout distributions so selectively skewed that, if you know any single member's phase assignment, you have an 80-90- percent chance of guessing the overall phase assignments of all members of an immediate work group (e.g., Rountree, 1984; Golembiewski & Munzenrider, 1988, esp. pp. 156-164).

This feature can powerfully inform the targeting of ameliorative interventions. Basically, one size does not fit all immediate work groups. The notion is not a new one, of course, being consistent with the "linking pin" concept of Likert (e.g., 1961), as well as with the emphasis on intact work teams characteristic of the OD literature (e.g., Dyer, 1987). The notion seems to require periodic re-learning, however, and the phase model conveniently provides a stimulant for such relearning that improves on earlier formulations (e.g., Golembiewski, & Boss, 1992).

Relatedly, the phase model encourages a view of "culture" as a mosaic rather than the monolith implicit not only in popularizations (e.g., Peters & Waterman, 1982) but also in most of the technical literature. Broadly, much of the literature assumes an organization is an organization, which dooms large panel research to inconsistent results and non-cumulative

effort because that assumption appears to be false to reality. As has been elegantly recognized (e.g., Miller & Friesen, 1984), this research strategy adds apples and oranges, if not ugly fruit, and hence is self-defeating. Oppositely, the phase model permits isolating immediate work units with differing degrees of burnout, which permits a specificity beyond the usual assumption. This capability not only helps target remedial designs, but also encourages speaking of organizations as complex mosaics of component units of variable and specified textures.

The focus on organizational mosaics has a longish tradition (e.g., Lawrence & Lorsch, 1967), but that tradition often wanes in the face of the apparent (but superficial) convenience of a kind of homology hypothesis -- e.g., a group is a group, an organization is an organization. In contrast, the phase model provides data for the concrete differentiation between units and aggregates of them. In turn, this information can permit the testing of the theoretical networks necessary for cumulative progress in management thought and practice.

Closing Words, If Only Temporarily

Research on the phase model is hardly complete, but what exists permits a useful degree of specificity about the public sector. Let the reader return to the question posed by this paper's sub-title: Worldwide, How Many Employees Have Which Degrees of Burnout, and With What Consequences?

The phase model permits a reasonable working answer. In public-sector populations, worldwide, large proportions of employees are assigned to advanced phases of burnout, and major negative consequences can be expected for both individuals and the systems within which they labor. This both requires and challenges research as well as application directed at burnout.

Note⁴

1. The term "our" is used descriptively, not imperiously. The present co-authors summarize a huge body of data which many helped amass, and they also contributed in signal ways to assembling the global panel of studies. The References detail many of the contributors to a decade-plus of individual studies in what now approaches 100 separate worksettings.

Note also that an earlier summary of the incidence of the phases in 26 North American settings appeared as a research note with 46 co-authors. See Golembiewski, et al., 1986.

Appendix A.
Descriptions of Public-Sector Worksites

I. U.S. Worksites

U.S. 1   employees of regional offices of a U.S. federal agency in people-helping roles. N = 1,535, and constitutes a horizontal slice of employees at low to upper-middle levels (Golembiewski & Munzenrider, 1988).

U.S. 2   N = 53, the executives and middle managers of a city probation office.

U.S. 3   K-6 teachers in Florida, N = 984 (Golembiewski, Scherb, & Munzenrider, 1994)

U.S. 4   N = 1,106, from a U.S. Air Force fighter wing, all ranks through colonel (Aldinger, 1993).

U.S. 5   N = 213 police from two municipal governments (Golembiewski, Scherb, Lloyd, & Munzenrider, 1992).

U.S. 6   N = 357 managerial personnel in 172 VA medical centers (Kilpatrick, Magnetti, & Mirvis, 1991).[1]

U.S. 7   N = 308 professionals from a state agency (Bower, 1994).

U.S. 8   N = 160 care-providers in a state agency for the physically limited (Billingsley, 1990).

U.S. 9   N = 69 executives from a collection of federal agencies at a training session.

U.S. 10   N = 79 executives from several federal agencies.

U.S. 11   N = 78 city and county managers (Golembiewski & Kim, 1987).

U.S. 12   N = 432, a comprehensive hospital population, excluding doctors (Munzenrider, 1995).

U.S. 13   N = 1,064, a field service of a federal agency, which is in the throes of a serious transition (Gabris & Ihrke, 1995).

II. Canadian Worksites

Canada 1   all employees of a hospital in western Canadian province, N = 404, excluding doctors.

Canada 2   N = 135, police from all Canadian levels of government attending a training session.

Canada 3   enrolees of a Police College in Ontario, Canada. N = 424 (Burke, Shearer, & Deszca, 1984).

Appendix A (continued).

Canada 4   N = 708, police at a training program in a Canadian educational setting.

Canada 5   N = 36, from a clerical section in a Canadian municipal government.

Canada 6   N = 58, from the clerical section above after a cut-back announcement.

Canada 7   N = 25, laborers in a Canadian municipal government.

Worksites without citations were published only in an aggregate panels. See Golembiewski, et al, 1986; Golembiewski, Munzenrider, & Stevenson, 1986; Golembiewski & Munzenrider, 1988; Golembiewski, Boudreau, Munzenrider, & Luo, 1996.

Canada 8   N = 38, in Site 7 after lay-off announcement.

Canada 9   N = 746, teachers in Canadian and elementary schools (Burke & Greenglass, 1989).

Appendix A (continued).

Canada 10   N = 307, Canadian teachers who responded to a survey (Burke & Greenglass, 1991).

Canada 11   those respondents from Canada 10 complement who also responded to a survey one year later (Burke & Greenglass, 1991).

III. Other Global Worksites

China A   N = 196 middle managers and above assembled for a conference (Rowney & Cahoon, 1987).

China B   N = 259 from 10 departments of Beijing municipal government, with about 60 percent in operating roles (Golembiewski & Luo, 1996).

Ghana A   N = 287 respondents from three hospitals near the capitol city (Fiadzo, 1995).

Japan A   N = 981 respondents from 6 health-care locations.   All jobs represented, except doctors (Boudreau & Golembiewski, 1989).

Japan B   N = 498 from several comprehensive health-care centers.   All jobs represented, except doctors (Boudreau & Golembiewski, 1990).

Japan C   N = 387, almost all from hospitals (Golembiewski, Boudreau, Goto, & Murai, 1992).

Saudi   N = 264 professional trainers and support personnel, Institute of Public
Arabia   Administration, Riyad (Al-Ebedah, 1996).

Taiwan A   N = 623 from 7 types of R.O.C. police, with about 16 percent in "inside" or office jobs.   All ranks of police are represented (Golembiewski, Sun, Lin, & Boudreau, 1995).

Taiwan B   N = 553 street-level bureaucrats from all but the 3 highest of 12 hierarchical grades (Lin, Sun, & Golembiewski, 1996).

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