

Table 3  
*t* Tests on Differences Over Time and Correlations Between Time 1 and Time 2 Constructs (*N* = 440)

Variable	<i>t</i> (441)	<i>p</i>	95% confidence interval		<i>d</i>	1	2	3	4	5	6	7	8	9
			Lower	Upper										
1. Exhaustion	-3.39	.01	-.37	-.10	-.16	.52**	.37**	.04	-.47**	-.24**	-.30**	-.27**	-.33**	-.28**
2. Cynicism	-3.85	.01	-.38	-.12	-.18	.27**	.51**	-.14**	-.18**	-.28**	-.34**	-.24**	-.36**	-.35**
3. Efficacy	-2.85	.01	-.27	-.05	-.14	.03	-.09*	.42**	-.10*	.11**	.12**	.06	.10*	.13**
4. Workload	1.83	<i>ns</i>	.00	.13	.09	-.43**	-.26**	-.09*	.62**	.17**	.20**	.23**	.27**	.15**
5. Control	2.35	.05	.02	.17	.11	-.22**	-.31**	.06	.13**	.54**	.40**	.34**	.46**	.38**
6. Reward	0.67	<i>ns</i>	-.05	.11	.03	-.19*	-.30**	.09	.18**	.33**	.51**	.29**	.43**	.41**
7. Community	2.58	.01	.02	.18	.12	-.22**	-.24**	.02	.16**	.34**	.36**	.53**	.46**	.35**
8. Fairness	2.82	.01	.03	.18	.13	-.25**	-.30**	.06	.20**	.35**	.41**	.33**	.59**	.46**
9. Values	3.41	.01	.05	.18	.16	-.21**	-.28**	.13**	.20**	.37**	.45**	.34**	.51**	.56**

\* *p* < .05. \*\* *p* < .01.

moved to engagement and 20 (53%) moved to burnout. Within the cynicism only group, 22 (38%) moved to engagement, and 36 (62%) moved to burnout. This contrast was not significant,  $\chi^2(1, N = 96) = 1.00, ns$ ; there was no bias toward either burnout or engagement for the inconsistent groups.

In summary, the inconsistent (early warning) pattern of Time 1 scores on exhaustion and cynicism provided sufficient information to identify participants who were more likely to have changed by Time 2. However, these patterns at Time 1 did not predict the direction of that change—whether it would be toward burnout or engagement—over the course of the year.

*Direction of Change*

*Hypothesis 3.* Congruent scores on the six areas of worklife were predicted to be negatively correlated with burnout at both Time 1 and Time 2. For the sample as a whole, the results showed that these six areas were indeed strongly negatively correlated with both the exhaustion and cynicism dimensions and positively correlated with professional efficacy at each of these times (see Tables 1 and 2).

In addition to this cross-sectional test of this hypothesis, the critical longitudinal test assessed whether changes in burnout over time were also correlated with predicted changes in areas of worklife. In other words, was moving to burnout consistent with experiencing more negative incongruence with the workplace, and was moving to engagement consistent with experiencing more

positive congruence? This analysis used paired *t* tests within the two inconsistent (early warning) subgroups.

Within the cynicism only group, those people moving toward burnout showed negative changes on many measures over the study interval (see Table 6). In addition to scoring higher on exhaustion at Time 2 (which led them to burnout), they scored more negatively on three of the six areas of worklife: workload, control, and values. In contrast, as indicated in Table 7, the only significant change for the subgroup moving to engagement was a lower score for cynicism (2.35 at Time 1, dropping to 1.29 at Time 2). This change simply reflects the new engagement group’s definition—changing from high cynicism to low cynicism—so it does not reflect any associated changes, as is the case for the new burnout group. None of the other scores showed a significant change over the study interval. Together, the pair of analyses in Table 6 and Table 7 indicated that moving to burnout was associated with an extensive negative evaluation of the workplace, while moving toward engagement was associated with only a decline in cynicism.

A similar set of results occurred for the exhaustion only group. Those moving to burnout at Time 2 scored higher on cynicism and scored lower on two areas of worklife: community and values (see Table 8). In contrast, the only significant difference from Time 1 to Time 2 for the subgroup moving to engagement was that exhaustion decreased from 2.76 to 1.51 over the study interval (see Table 9). Together the pair of analyses in Table 8 and Table 9

Table 4  
*Distribution Across Years of Job Tenure*

Job tenure	Time 1									
	Low exhaustion				High exhaustion				Total	
	Low cynicism		High cynicism		Low cynicism		High cynicism			
<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>N</i>	%	
Less than 2 years	45	31%	12	19%	24	28%	32	20%	113	25%
3 years to 19 years	75	52%	38	62%	50	58%	100	64%	263	59%
20 years or more	24	16%	11	18%	11	12%	22	14%	68	15%
Total	144		61		85		154		444	

Table 5  
Shifts Across Groups from Time 1 to Time 2

Time 1	Time 2				Total
	Low exhaustion		High exhaustion		
	Low cynicism	High cynicism	Low cynicism	High cynicism	
Low exhaustion					
Low cynicism	<b>83</b>	15	21	25	144
High cynicism	22	<b>20</b>	7	36	85
High exhaustion					
Low cynicism	18	1	<b>22</b>	20	61
High cynicism	26	18	27	<b>79</b>	150
Total	149	54	77	160	440

Note. Numbers in bold represent those remaining in the identical group from Time 1 to Time 2.

indicates that those moving to burnout reported a more negative outlook over the year, but those moving to engagement changed solely on the defining dimension of lower exhaustion.

*Hypothesis 4.* For the two inconsistent (early warning) groups, it was hypothesized that a workplace incongruity in at least one of the six areas of worklife at Time 1 would serve as a tipping point and predict that people's subsequent change by Time 2 would be toward burnout rather than toward engagement. The analysis investigated these differences through a series of six *t* tests using a .0086 level of significance to accommodate the repeated tests determined through Bonferroni adjustment. These tests were conducted separately for each of the two inconsistent groups at Time 1.

Within the cynicism only group, the only difference at Time 1 between the subgroup that eventually moved toward burnout and the subgroup that eventually moved toward engagement was their assessment of the fairness area of worklife. At Time 1, those who moved to engagement at Time 2 scored higher on fairness ( $M = 3.52$ ) than did those who had moved to burnout at Time 2 ( $M = 2.71$ ),  $t(56) = 3.69$ ,  $p < .001$ ; Cohen's  $d = 1.05$ ; 95% CI =  $-1.24, -0.37$ . A similar set of findings emerged for the exhaustion only group. Once again, the only difference at Time 1 was in the fairness area of worklife. Those who moved to engagement at Time 2 scored higher on Time 1 fairness ( $M = 3.38$ ) than did those who moved to burnout at Time 2 ( $M = 2.77$ ),  $t(32) = 3.01$ ,  $p < .001$ ; Cohen's  $d = .76$ ; 95% CI =  $-1.03, -0.20$ .<sup>3</sup>

#### Post Hoc Departmental Analysis

This analysis considered whether the shift toward or away from burnout was associated with membership in the department that underwent a crisis immediately prior to the Time 2 survey. Table 10 displays the shift for the two inconsistent (early warning) groups, designating whether respondents were members of the crisis department or any other department. The analysis confirmed a bias in the shift, with members of the crisis department more likely to change toward burnout than were members of other departments,  $\chi^2(1, N = 96) = 5.66$ ,  $p < .05$ .

A post hoc examination of Time 1 scores indicated that the percentage of crisis department employees showing early warning

signs was similar to the percentage for the organization as a whole: 20.4% for cynicism only (vs. 19.6% overall), and 16.0% for exhaustion only (vs. 13.9% overall). However, the distinctive shift of the crisis department toward burnout was presaged by the fact that it scored most negatively on the workplace incongruity (tipping point) of fairness, compared with all the other departments,  $t(443) = 2.58$ ,  $p < .01$ ; Cohen's  $d = 0.24$ ; 95% CI = 0.05, 0.37. In addition, it scored more negatively than the others on incongruities in workload,  $t(443) = 2.68$ ,  $p < .01$ ; Cohen's  $d = 0.26$ ; 95% CI = 0.55, 0.36; and values,  $t(443) = 2.73$ ,  $p < .01$ ; Cohen's  $d = 0.27$ ; 95% CI = 0.52, 0.32. It appears that the pattern of tipping point indicators at Time 1 did indeed provide a relevant clue for the department's future problems.

#### Discussion

This new longitudinal research approach has yielded fresh insights into the process of how burnout changes over time. The empirical evidence is that people who are likely to actually shift toward burnout can be identified in advance by two indicators: an early warning sign of inconsistent scores and the tipping point experience of a job-person incongruence. Given that these two characteristics can be easily assessed, this approach provides organizations and employees with a powerful tool for preventive intervention. Later in the discussion these findings will be translated into decision rules for management use to address burnout early in its development.

#### Research Issues

As an initial step, this study provides longitudinal evidence in support of the hypotheses underlying this new approach. First, the standard relationship between the exhaustion and cynicism dimensions of burnout, and the corresponding consistency and stability of the burnout and engagement patterns, were replicated over the 1-year interval. Second, the relationship between burnout and mismatches in the six areas of worklife was also replicated longitudinally. The corroboration of these two longitudinal relationships provides the empirical foundation for our new approach to predicting changes in burnout. The first relationship between burnout dimensions allows us to identify an inconsistent pattern as an early warning sign of potential change. The second relationship allows us to identify a workplace incongruity as a potential tipping point toward burnout, rather than engagement. The results confirm our initial hypotheses that the inconsistent pattern predicts the likelihood of future change but that the incongruity score predicts what direction that change will take.

In this particular study, the critical incongruity, or tipping point, turned out to be the area of fairness. If people were experiencing problems with fairness in the workplace (such as favoritism, un-

<sup>3</sup> An alternative explanation for the relationships among study variables is common method variance. Although examination of the current measures in structural equation analyses has identified significant correlations among error terms within the MBI and the AWS subscales, there have been no problematic error correlations among items in different subscales (Leiter et al., 2007). The use of composite measures within the analyses reported here reduces the potential impact of common method variance on these results.

Table 6  
*Contrast of Time 1 With Time 2 for Cynicism Only Group That Changed Toward Burnout*

Variable	Time 1		Time 2		<i>t</i> (34)	<i>p</i>	95% confidence interval		Cohen's <i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			Lower	Upper	
Workload	3.25	0.75	2.70	0.68	4.70	.01	0.32	0.80	0.78
Control	3.60	0.89	3.07	0.92	3.43	.01	0.22	0.84	0.57
Reward	3.11	0.94	2.83	0.88	1.99	<i>ns</i>	-0.01	0.58	0.33
Community	3.32	0.85	3.01	0.97	2.17	.05	0.02	0.60	0.36
Fairness	2.71	0.76	2.57	0.79	1.12	<i>ns</i>	-0.12	0.40	0.19
Values	3.22	0.58	2.81	0.57	3.16	.01	0.15	0.68	0.53
Exhaustion	1.23	0.48	3.39	1.24	-9.86	.01	-2.60	-1.71	-1.64
Cynicism	2.68	1.03	3.81	1.19	-5.10	.01	-1.58	-0.68	-0.85
Efficacy	4.52	0.98	4.23	1.00	1.34	<i>ns</i>	-0.15	0.75	0.22

justified inequities, or cheating), their early warning pattern was likely to develop into burnout over time. In contrast, for those people who were not experiencing a fairness incongruity, the early warning pattern (of either exhaustion or cynicism) was likely to diminish over time and result in a pattern of engagement.

However, is the area of fairness always going to serve as the critical incongruity in the workplace, or might some of the other five areas serve that function as well? It could be that fairness plays a unique and central role in defining the workplace in fundamental terms as either a good place or a bad place to be. Once people begin to feel hostile and angry about job inequities, and lack faith in organizational processes to right any wrongs, this may set in motion an increasing cascade of negative reactions to the job. However, people who feel the workplace is fair and equitable, and who trust that good solutions will be found for problems, may be able to weather the storm that has led to the early warning sign. If correct, this analysis would suggest that fairness constitutes a primary tipping point—either the first, or only, or most important one.

An alternative argument is that the nature of the tipping point may depend on current conditions in the work environment. That is, the incongruity will reflect whatever area is most dominant—because of policies, or practices, or problems. For example, in an organization that is experiencing recurring problems of staff conflict and absenteeism, the area of community might be the source of a major incongruity. It could be argued that fairness was the dominant and salient issue for the organization that participated in

the study, as the initial results of the assessment at Time 1 led the senior management to identify the fairness area as especially problematic and to ask all of the departments to make changes that would improve fairness issues over time. The fact that there was a major fairness crisis in one of the departments underscores the salience of this particular area of worklife. It is important to keep in mind that this crisis occurred almost a year after the Time 1 assessment, so the incident itself cannot be viewed as causing the differential predictiveness of the incongruity scores for fairness.

Future longitudinal research will need to continue to assess all six areas of worklife in order to distinguish between the alternative hypotheses of primacy and saliency. Collection of other independent data about current conditions in the workplace would be especially helpful in this regard. Also, the use of an alternative method, such as a diary study, could provide useful evidence with regard to changes in people's job experience over time.

In addition to replicating these initial findings, future studies might explore improved measures of both of these early indicators. In the current study, a simple distinction between high and low scores on exhaustion and cynicism was made on the basis of a median split. Perhaps the early warning predictions might be improved by using a more sophisticated approach to scoring, such as a weighting of more extreme scores, or the use of the third dimension of burnout (inefficacy). Similarly, a better tipping point index might involve some combination of the six areas of worklife. Alternatively, there may be other variables, which are currently

Table 7  
*Contrast of Time 1 With Time 2 for Cynicism Only Group That Changed Toward Engagement*

Variable	Time 1		Time 2		<i>t</i> (34)	<i>p</i>	95% confidence interval		Cohen's <i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			Lower	Upper	
Workload	3.40	0.72	3.40	0.74	-0.01	<i>ns</i>	-0.34	0.34	0.00
Control	3.50	0.66	3.65	0.65	-0.85	<i>ns</i>	-0.52	0.22	-0.18
Reward	3.32	0.74	3.58	0.67	-1.55	<i>ns</i>	-0.61	0.09	-0.33
Community	3.57	0.81	3.53	0.60	0.26	<i>ns</i>	-0.31	0.40	0.06
Fairness	3.52	0.84	3.33	0.65	1.21	<i>ns</i>	-0.14	0.52	0.26
Values	3.42	0.75	3.60	0.50	-1.36	<i>ns</i>	-0.46	0.10	-0.30
Exhaustion	1.05	0.54	1.09	0.42	-0.34	<i>ns</i>	-0.33	0.24	-0.07
Cynicism	2.35	0.73	1.29	0.34	5.66	.01	0.67	1.44	1.21
Efficacy	4.42	1.40	4.65	1.38	-0.80	<i>ns</i>	-0.82	0.37	-0.17

**Table 8**

*Contrast of Time 1 With Time 2 for Exhaustion Only Group That Changed Toward Burnout*

Variable	Time 1		Time 2		<i>t</i> (34)	<i>p</i>	95% confidence interval		Cohen's <i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			Lower	Upper	
Workload	2.79	0.89	2.61	0.66	1.61	<i>ns</i>	-0.06	0.42	0.72
Control	3.60	0.83	3.13	1.18	1.91	<i>ns</i>	-0.05	0.98	0.85
Reward	3.58	0.82	3.26	0.62	1.68	<i>ns</i>	-0.08	0.70	0.75
Community	3.75	0.79	3.21	1.01	2.96	.01	0.16	0.92	1.32
Fairness	2.77	0.65	2.32	0.97	2.33	.05	0.05	0.85	1.04
Values	3.25	0.78	2.65	0.93	3.70	.01	0.26	0.94	1.65
Exhaustion	3.16	0.96	3.62	0.95	-2.08	.05	-0.92	0.00	-0.93
Cynicism	0.92	0.38	3.30	1.05	-8.71	.01	-2.95	-1.81	-3.89
Efficacy	4.54	1.08	4.38	1.25	0.51	<i>ns</i>	-0.49	0.80	0.23

untested, that would also serve as effective early warnings or tipping points. The challenge of conducting such future longitudinal research will continue to be considerable; the studies will need to involve sufficiently large samples of employees whose individual responses can be linked accurately over repeated assessments.

*Implications for Intervention*

The ability to predict future change has a clear practical benefit. Because it is now possible to identify in advance those people who are at greater risk for problems, organizations can be in a better position to develop targeted interventions. Some interventions might involve an individualized approach, such as personalized counseling or professional training. However, it is more likely that signs of impending problems will not be randomly distributed throughout the workforce but will tend to cluster within particular units or occupational groups—and such cluster patterns may call for broader, organizational solutions rather than individual ones.

In the current study, the crisis department turned out to be an example of such clustering. A look back at the Time 1 scores of employees in this unit shows that the combination of early warning signs and an incongruity for fairness (as well as two other areas) were signals that this particular department was in trouble and needed organizational attention. It is possible that earlier efforts to tackle these departmental problems might have lessened or forestalled the later crisis.

An intriguing finding that emerged from this study was the differential pattern associated with a change toward burnout as opposed to a change toward engagement. Increased burnout came with a much more negative evaluation of the workplace, but increased engagement showed no corresponding positive shift. In other words, when people's congruent evaluation of the workplace remained constant over the year, their early warning sign dissipated; however, when things got worse over time and people reported more areas of job-person incongruence, the early warning sign developed into burnout.

These contrasting patterns of change suggest that engagement is the more normative experience in the workplace as well as that occasional problems (which could lead to an early warning sign) are likely to be temporary and more easily resolved if the person maintains a good relationship with the job. Burnout, on the other hand, appears to be a major change from this normative baseline, in which the person's relationship to the job becomes increasingly problematic, and the mismatch of the initial incongruity spreads to more areas of worklife. If this speculation is correct, it suggests that different intervention strategies might be needed when a tipping point accompanies an early warning sign than when it does not. For example, the presence of a tipping point may signal the need for a more extensive organizational intervention to cope with the growing problem. However, an early warning sign, by itself, might call

**Table 9**

*Contrast of Time 1 With Time 2 for Exhaustion Only Group That Changed Toward Engagement*

Variable	Time 1		Time 2		<i>t</i> (34)	<i>p</i>	95% confidence interval		Cohen's <i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			Lower	Upper	
Workload	3.17	0.72	3.37	0.49	-1.63	<i>ns</i>	-0.47	0.06	-0.39
Control	3.74	0.42	3.98	0.58	-2.25	.05	-0.47	-0.01	-0.53
Reward	3.31	0.87	3.65	0.61	-1.81	<i>ns</i>	-0.75	0.06	-0.43
Community	3.58	0.85	3.59	0.84	-0.05	<i>ns</i>	-0.45	0.43	-0.01
Fairness	3.38	0.60	3.39	0.63	-0.07	<i>ns</i>	-0.31	0.29	-0.02
Values	3.69	0.62	3.48	0.78	1.48	<i>ns</i>	-0.09	0.51	0.35
Exhaustion	2.76	0.66	1.51	0.35	6.42	.01	0.84	1.65	1.51
Cynicism	0.66	0.48	0.62	0.47	0.24	<i>ns</i>	-0.26	0.33	0.06
Efficacy	5.33	0.57	5.18	1.30	0.51	<i>ns</i>	-0.49	0.80	0.12

**Table 5.11. Sample Table of One-Degree-of-Freedom Statistical Contrasts**

Table X

*Contrast of Time 1 With Time 2 For Exhaustion-Only Group That Changed Toward Burnout*

Variable	Time 1		Time 2		<i>t</i> (34)	<i>p</i>	95% CI		Cohen's <i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			<i>LL</i>	<i>UL</i>	
Workload	2.79	0.89	2.61	0.66	1.61	.12	-0.06	0.42	0.72
Control	3.60	0.83	3.13	1.18	1.91	.06	-0.05	0.98	0.85
Reward	3.58	0.82	3.26	0.62	1.68	.10	-0.08	0.70	0.75
Community	3.75	0.79	3.21	1.01	2.96	.006	0.16	0.92	1.32
Fairness	2.77	0.65	2.32	0.97	2.33	.03	0.05	0.85	1.04
Values	3.25	0.78	2.65	0.93	3.70	<.001	0.26	0.94	1.65
Exhaustion	3.16	0.96	3.62	0.95	-2.08	.05	-0.92	0.00	-0.93
Cynicism	0.92	0.38	3.30	1.05	-8.71	<.001	-2.95	-1.81	-3.89
Efficacy	4.54	1.08	4.38	1.25	0.51	.61	-0.49	0.80	0.23

*Note.* CI = confidence interval; *LL* = lower limit; *UL* = upper limit. Adapted from "Early Predictors of Job Burnout and Engagement," by C. Maslach and M. Leiter, 2008, *Journal of Applied Psychology*, 93, p. 509. Copyright 2008 by the American Psychological Association.



be  
ist  
is