

ASSESSING COUNTERPRODUCTIVE WORK BEHAVIOR: A STUDY ON THE DIMENSIONALITY OF CWB-CHECKLIST

CLAUDIO BARBARANELLI

ROBERTA FIDA

MARIO GUALANDRI

SAPIENZA UNIVERSITY OF ROME

Researchers have stressed the importance of assessing counterproductive work behaviors (CWB) which represent one of the most serious problems facing today's organizations. This study investigated the psychometric properties of CWB checklist in an Italian sample of 856 workers (52.5% women), ranging in age from 17 to 66 years. Through a cross-validation approach results confirmed the two-factor structure of this scale. The two main facets of CWB, CWB toward organization and CWB toward people, resulted correlated but separable. In fact, an alternative model positing a single primary factor underlying the two facets was not supported vis a vis the empirical data. Moreover, the two CWB facets showed up with a different pattern of correlations among different work stressors. While these two facets seems to have a common root, they are by the way undoubtedly diverse, and this difference is of important relevance for practical and theoretical purposes.

Key words: Counterproductive work behavior; Measurement; Italian validity; Dimensionality; Factorial structure.

Correspondence concerning this article should be addressed to Claudio Barbaranelli, Dipartimento di Psicologia, Sapienza Università di Roma, Via dei Marsi 78, 00185 Roma, Italy. Email: claudio.barbaranelli@uniroma1.it

INTRODUCTION

Counterproductive work behaviors (CWB) are pervasive in the workplace and represent one of the most serious problems facing today's organizations in many countries (Chappell & DiMartino, 2006; Vardi & Weitz, 2004). According to the literature, these behaviors consist of volitional acts intentionally aimed at harming organizations or people in organizations such as clients, coworkers, customers and supervisors (Gruys & Sackett, 2003; Spector & Fox, 2005). Researchers have attempted to classify the different types of CWB within a taxonomy. Among them Spector and Fox (2005) proposed one of the most complete classifications of CWB, comprising different types of CWB (Fox & Spector, 1999; Spector et al., 2006). Along with the development of this taxonomy of CWB, the authors proposed a model for the origin and regulation of CWB (the so called "stressor emotion model") and developed an instrument, the CWB Checklist (CWB-C), for the assessment of self as well as other reported CWB. The present study deals with the examination of CWB-C psychometric properties and generalizability in the Italian context.

According to Spector and Fox (2005), CWB are different from common negative acts since they are not accidental and are intended specifically to damage, by purposeful action, an organization, people in an organization or both. These behaviors have multiple origins, since they

can arise from organizational factors (Fox, Spector, & Miles, 2001), as well as from personality characteristics (Bowling & Eschleman, 2010; Salgado, 2002; Spector & Fox, 2005). CWB-C is the final result of several revisions made on its first version, that have been used by Spector since 1975. In his first seminal study investigating the reactions to frustration in workplace, the author hypothesized that frustrations experienced by an employee on the job would be associated with potentially detrimental behaviors such as aggression against others or sabotage. After several revisions, the final CWB-Checklist comprised 45 items.

Spector and Fox (2005) sorted the items of their CWB-C into categories according to target: 21 items were identified as related to CWB directed toward organization and 22 to CWB directed toward people (colleagues, supervisors, clients). Some examples of CWB-O are taking excessive breaks, working on a personal matter instead of working for the employer, or intentionally working slowly. CWB-P refer to acts of aggression such as verbal insults, spreading false rumors about others, and withholding crucial information from others. The authors also proposed five subscales that can be derived from part of the CWB-C items, measuring typical actions described by specific behavior such as *abuse* (harmful and nasty behaviors that affect other people), *production deviance* (purposely doing the job incorrectly or allowing errors to occur), *sabotage* (destroying the physical environment), *theft* and *withdrawal* (avoiding work through being absent or late) (Fox & Spector, 1999; Spector et al., 2006). Spector and Fox's (2005) checklist can also be read, similar to the hierarchical model of Sackett and DeVore (2002), as a single general factor under which there are two more specific factors representing organizational deviance and interpersonal deviance beneath that. Within these two more specific factors, even the more specific types of behavior would fall (e.g., absenteeism, theft, etc.). While the 2-subscale based scores have been widely used in the literature (e.g., Bruk-Lee & Spector, 2006; Fox et al., 2001; Penney & Spector, 2005), the 5-subscale scores have rarely been used except for one study by Spector and colleagues (2006).

According to Spector and Fox, CWB are an emotion-based response to stressful organizational conditions (Fox & Spector, 1999; Spector 1975, 1978). Their model, the so-called stressor emotion model, is mainly focused on interpersonal conflict, organizational constraints and workload as the most frequently reported job stressors in organizations, associated with negative emotions which have been found to relate to various forms of CWB (Spector & Fox, 2005). Interpersonal conflict refers to how well an individual gets along with others at work, from minor disagreements between coworkers to more severe physical assaults on others (Spector & Jex, 1998). Chen and Spector (1992) showed that interpersonal conflict has a significant positive correlation with sabotage, interpersonal aggression, hostility and complaints, and intention to quit. Indeed conflict has been found positively and significantly related to both organizational and interpersonal types of CWB. Bruk-Lee and Spector (2006), through CWB-C, found that conflict with coworkers resulted in CWB directed toward people (CWB-P), whereas conflict with supervisors was more likely to result in CWB directed toward organization (CWB-O). Organizational constraints refer to situations at work that interfere with an individual's task, goal or performance, such as a lack of time, resources, inadequate equipment or supplies, organizational rules and procedures, understaffing, or lack of help from others (Peters & O'Connor, 1980). Several studies showed that this stressor has different relationships with the two categories of CWB (Fox et al., 2001; Spector et al., 2006) being more related to CWB-O rather than to CWB-P (Fox et al., 2001). Workload can be considered in terms of number of hours worked, level of production, or even the mental demands of the work being performed. While constraints and conflict can be

considered as psychosocial stressors mainly arising from interactions among people (Spector & Jex, 1998), workload is more related to tasks more than it is to people. A high workload is likely to make workers feel uncertain about whether they can get all of the work done (Beehr & Bhagat, 1985). Indeed Krischer, Penney, and Hunter (2010) showed that workload would more likely lead to enacting CWB toward organization rather than toward organizational members.

While CWB-C dimensionality has been addressed mainly from a conceptual viewpoint, there are no studies addressing the dimensionality of CWB-C empirically. Accordingly the aim of this paper is to fill this gap by examining the factorial structure of CWB-C and to present support for its validity on an Italian sample. We will examine the scale and its factor structure through a cross-validation approach and the validity within the framework of stressor emotion model.

MATERIALS AND METHODS

Participants and Procedure

Participants were 856 Italian workers (52.5% women), ranging in age from 17 to 66 years ($M = 39.6$, $SD = 11.35$). The majority of participants (65.9%) have permanent contracts in a full time job and 6.6% have permanent contracts in a part time job (35.4% in Italian public organizations). The average of total work years is 16.3 ($SD = 10.91$) with an average of weekly job hours of 34.9 ($SD = 10.76$). A total of 15.9% of participants have a second job and an average of weekly hours of the second job of 5.8 ($SD = 9.95$). Participants were recruited by psychology master students as part of their master-thesis requirement: each student recruited from 50 to 100 participants in different work and organizational settings. Each participant filled in the questionnaire individually and returned it the same day they received it within a closed envelope. Before starting, the researcher explained to them that their responses would be absolutely confidential, that the questionnaire was anonymous and that the research was not commissioned by the organization for which they worked. Participants were not paid for their participation in this study.

Measures

Counterproductive Work Behavior Checklist (CWB-C; Spector et al., 2006) is a 45-item Likert scale measuring a wide range of CWB. Participants were asked to indicate how often they had done each of the behaviors in their present job. Response choices were presented in a 5-point format ranging from 1 (*never*) to 5 (*every day*).

Organizational Constraints Scale (OCS; Spector & Jex, 1998) is composed of 11 items based on constraint areas identified by Peters and O'Connor (1980), measuring the frequency with which employees encountered barriers to job performance, such as rules and procedures, availability of resources, co-workers, interruptions, and inadequate training. Response choices range from 1 (*less than once per month or never*) to 5 (*several times per day*).

The Interpersonal Conflict at Work Scale (ICAWS; Spector & Jex, 1998) is composed of four items measuring the frequency with which the employee experienced arguments, yelling, and

rudeness in interactions with co-workers. Five response choices are given, ranging from 1 (*rarely*) to 5 (*very often*).

The Quantitative Workload Inventory (QWI; Spector & Jex, 1998) is composed of five items designed to assess the amount or quantity of work in a job. Five response choices are given, ranging from 1 (*less than once per month or never*) to 5 (*several times per day*).

All scales reported in this study are Italian adaptations of the original American scales. These scales were translated by the first author, then a back-translation procedure was performed by a bilingual researcher, and an Italian form of the item was accordingly trimmed in order to maximally reflect the original meaning of the original English-American formulation. The Appendix reports the official Italian version of the scales.

The psychometric properties of the four scales (CWB, OCS, ICAWS and QWI) as far as factorial structure, reliability and validity are discussed in the results section.

RESULTS

All factor analyses were performed using MPLUS 7.1 software (Muthén & Muthén, 2013). Due to the behaviors investigated, many items of the CWB scale resulted in high skewness and kurtosis: skewness ranged from 1.025 to 7.21, kurtosis ranged from .187 to 104.831. Following Muthén and Kaplan (1985) we transformed items presenting a very skewed distribution (with at least 80% of frequencies in a single category) into dichotomies: to this aim the lower category (*never*) was recoded with the score of 0, and all the other categories were recoded with the score of 1.

Dimensionality of CWB

A first confirmatory factor analysis was carried out on the total sample testing the two-factor model devised by Spector and colleagues (2006). In this analysis factors were specified by assigning items to the posited latent dimension of CWB-O and CWB-P according to what indicated by Spector. All items' cross-loadings were fixed at zero. As specified in Spector's website (<http://shell.cas.usf.edu/~pspector/scales/cwbcpage.html>), 43 out of 45 of CWB-C are used to define CBQ-O and CWB-P (the two remaining items are used only to compute the five specific scales; see also Spector et al., 2006). Due to highly skewed distribution, WLS-MV method for parameter estimation was used (Muthén & Muthén, 2013). This weighted least square method is highly recommended to applied researchers for the analysis of ordinal or dichotomous variables (Flora & Curran, 2004). The estimated factor loadings of this solution are presented in Table 1.

The two factors showed a significant and high correlation of .80. Goodness of fit indices indicated an ambiguous solution: $\chi^2(859, N = 856) = 1,897, p < .001$, root mean square error of approximation (RMSEA) = .038 [90% Confidence interval: LL = .035, UL = .040, $p(\text{RMSEA} \leq .05) = 1$], comparative fit index (CFI) = .88, TLI = .87, and weighted root mean square residual (WRMR) = 1.55. While the RMSEA evidenced an excellent fit to the data, the other fit indices converged in evidencing an inadequate fit. The source of this inadequacy may be due to the presence of misspecification in the factorial pattern, as suggested by 21 significant modification indices (MI), four of them exceeding 20.

TABLE 1
 Loadings' estimates from the CFA on the total sample

CWB-O		CWB-P	
CWB_1D	.523	CWB_11D	.617
CWB_2	.527	CWB_20D	.683
CWB_3	.566	CWB_21D	.731
CWB_4	.508	CWB_26	.656
CWB_5D	.577	CWB_27	.780
CWB_6	.516	CWB_28D	.765
CWB_7	.563	CWB_29	.541
CWB_8D	.854	CWB_30D	.782
CWB_9D	.633	CWB_31	.555
CWB_10D	.614	CWB_32D	.693
CWB_13	.631	CWB_33	.732
CWB_14	.595	CWB_34D	.727
CWB_15D	.587	CWB_35D	.762
CWB_16D	.595	CWB_36D	.741
CWB_17	.605	CWB_37D	.820
CWB_18D	.676	CWB_38D	.785
CWB_19	.623	CWB_39D	.790
CWB_22D	.623	CWB_40D	.792
CWB_23	.703	CWB_41D	.914
CWB_24D	.742	CWB_42D	.675
CWB_25D	.905	CWB_43D	.827
		CWB_44D	.758

Note: D = dichotomous item.

Due to dissatisfactory results of this first analysis, instead of respecifying the factorial pattern in CFA by freeing fixed parameters according to MIs, an exploratory-confirmatory cross validation strategy was applied for a better trimming of CWB-C factorial structure (Hoyle & Panter, 1995; MacCallum, Roznowski, Mar, & Reith, 1994). According to this approach, the factor structure of CWB-C was tested dividing the total sample in two random halves. The first sub-sample served as a *generative sample* to examine CWB dimensionality through exploratory factor analysis (EFA). The second sub-sample served as a *validation sample* where confirmatory factor analysis (CFA) was used to test replicability of the factor model (Bollen, 1989; Thompson, 1994). EFA on the first sub-sample ($N = 419$, 52% women, $M_{age} = 38$, $SD = 11.5$) was performed, again using WLSMV estimator, with oblique Promax rotation. The literature on CWB was considered as a guide for choosing the number of factors to be extracted and then rotated (e.g., Robinson & Bennett, 1995; Spector & Fox, 2002; Spector et al., 2006). Accordingly a two-factor solution was requested. The factorial pattern resulting from this analysis is presented in Table 2.

The first factor is loaded mainly by CWB-O items, the second by CWB-P items: the two factors present a positive correlation of .61. Goodness of fit indices evidenced again a mixed result with an excellent RMSEA of .032 and a bad SRMR of .11. As can be easily seen, there are nine items (8, 9, 11, 14, 15, 26, 29, 30 and 42) that presented a primary loading on a factor different from the intended one, some of them with relevant cross loadings. Six items (3, 5, 16, 27, 31, and 32) presented their primary loading on the intended factor but showed a cross-loading of a

magnitude comparable to the primary one. We decided to drop these items from the analysis and rerun the EFA on the remaining 28 items. The 15 dropped items were seven items of CWB-O and eight items of CWB-P. Another CWB-O item (4) was dropped from the 28-item based analysis since in the new analysis it showed a low primary loading of .33 on CWB-O and an almost comparable secondary loading of .22 on CWB-P, thus evidencing a more critical behavior than in the previous analysis where the factor loadings were .373 and .196 (see Table 2).

TABLE 2
 Loadings' estimates from the EFA on sub-sample 1 using all 43 CWB-C items

	CWB-O items		CWB-P items		
	Factor 1	Factor 2	Factor 1	Factor 2	
CWB_1D	.477	-.044	CWB_11D ¹	.624	.064
CWB_2	.738	-.252	CWB_20D	.055	.570
CWB_3 ²	.366	.227	CWB_21D	.260	.475
CWB_4 ²	.373	.196	CWB_26 ¹	.397	.368
CWB_5D ²	.312	.262	CWB_27 ²	.435	.447
CWB_6	.411	.174	CWB_28D	.219	.644
CWB_7	.673	-.143	CWB_29 ¹	.320	.206
CWB_8D ¹	-.015	.805	CWB_30D ¹	.490	.362
CWB_9D ¹	.284	.346	CWB_31	.316	.319
CWB_10D	.825	-.241	CWB_32D	.344	.385
CWB_13	.518	.130	CWB_33	.025	.772
CWB_14 ¹	.150	.414	CWB_34D	.054	.763
CWB_15D ¹	.294	.365	CWB_35D	-.267	.991
CWB_16D ²	.301	.278	CWB_36D	-.259	.948
CWB_17	.649	-.020	CWB_37D	-.149	.988
CWB_18D	.570	.198	CWB_38D	-.052	.868
CWB_19	.713	-.072	CWB_39D	.196	.563
CWB_22D	.917	-.231	CWB_40D	.116	.779
CWB_23	.876	-.152	CWB_41D	.251	.731
CWB_24D	.821	-.002	CWB_42D ¹	.409	.351
CWB_25D	.823	.212	CWB_43D	-.081	.909
			CWB_44D	.071	.801

Note: D = dichotomous item. Principal loadings are given boldface. ¹Item eliminated because loaded in a factor different from the intended one. ²Item eliminated because of high cross-loading.

The final 27-item EFA solution is showed in Table 3. This solution was much clearer than the previous one. This solution, however, still presented mixed fit indices, with an excellent RMSEA of .031 and a bad SRMR of .10.

Results from this EFA were validated by means of a CFA performed on the second sub-sample ($N = 425$, 53% women, $M_{age} = 40$, $SD = 11.2$). The estimated factor loadings of this solution are presented in Table 4. The two factors showed a significant and high correlation of .68. Goodness of fit indices indicated a good fit of the model to the data, being: $\chi^2(323, N = 425) = 520$, $p < .001$, RMSEA = .037 [90% Confidence interval: LL = .031, UL = .043, $p(\text{RMSEA} \leq .05) = 1$], CFI and TLI both equal to .93, and WRMR = 1.15. All factor loadings resulted statistically significant with values ranging from .536 to .942.

TABLE 3
 Loadings' estimates from the EFA on sub-sample 1 using the selected 27 CWB-C items

	CWB-O items		CWB-P items		
	Factor 1	Factor 2	Factor 1	Factor 2	
CWB_1D	.474	-.031	CWB_20D	.006	.585
CWB_2	.669	-.164	CWB_21D	.245	.506
CWB_6	.396	.223	CWB_28D	.253	.635
CWB_7	.656	-.086	CWB_33	.031	.774
CWB_10D	.770	-.129	CWB_34D	.117	.754
CWB_13	.529	.149	CWB_35D	-.192	.955
CWB_17	.605	.045	CWB_36D	-.212	.920
CWB_18D	.528	.227	CWB_37D	-.046	.907
CWB_19	.684	.021	CWB_38D	.055	.808
CWB_22D	.830	-.088	CWB_39D	.208	.578
CWB_23	.823	-.037	CWB_40D	.140	.767
CWB_24D	.809	.047	CWB_41D	.274	.711
CWB_25D	.826	.220	CWB_43D	.019	.869
			CWB_44D	.102	.800

Note: D = dichotomous item. Principal loadings are given boldface.

TABLE 4
 Loadings' estimates from the CFA on sub-sample 2 using the selected 27 CWB-C items

CWB-O		CWB-P	
CWB_1D	.633	CWB_20D	.776
CWB_2	.611	CWB_21D	.787
CWB_6	.536	CWB_28D	.710
CWB_7	.659	CWB_33	.718
CWB_10D	.687	CWB_34D	.742
CWB_13	.564	CWB_35D	.829
CWB_17	.691	CWB_36D	.826
CWB_18D	.612	CWB_37D	.788
CWB_19	.690	CWB_38D	.836
CWB_22D	.626	CWB_39D	.881
CWB_23	.738	CWB_40D	.735
CWB_24D	.771	CWB_41D	.942
CWB_25D	.949	CWB_43D	.864
		CWB_44D	.720

Note: D = dichotomous item.

This solution is obviously confirmed when the analysis is run on the total sample of participants, with fit indices as follow: $\chi^2(323, N = 856) = 739, p < .001, RMSEA = .039$ [90% Confidence interval: LL = .035, UL = .044, $p(RMSEA \leq .05) = 1$], CFI = .93, TLI = .92, and WRMR = 1.38. All factor loadings resulted statistically significant with values ranging from .546 to .912.

Factor correlation was .64 ($SE = .036$, 99% Confidence interval: $LL = .542$, $UL = .730$). An alternative model was tested on the total sample, positing one factor model. This model did not fit the data adequately, the fit indices being: $\chi^2(324, N = 856) = 1357$, $p < .001$, $RMSEA = .061$ [90% Confidence interval: $LL = .058$, $UL = .064$, $p(RMSEA \leq .05) < .001$], $CFI = .93$, $TLI = .92$, and $WRMR = 2.00$.

Reliability estimates for the two CWB factors were derived by means of Cronbach's alpha on the total sample. Alphas were equal to .80 and to .89 respectively for CWB-O and for CWB-P, with item total corrected correlations ranging from .25 to .53, and from .46 to .71 respectively for CWB-O and for CWB-P.

Construct Validity

The total sample was used to evaluate the nomological validity of CWB-C within the framework of the stressor emotion model, considering thus a full structural equation model with the two CWB-C factors as dependent variables and as independent variables the three constructs considered as the main sources of stress in this model, namely interpersonal conflicts, quantitative workload, and organizational constraints (Spector et al., 2006). In the measurement part of the model interpersonal conflicts (IC), quantitative workload (QW), and organizational constraints (OC) were posited as latent variables measured by, respectively, four, five and eleven items. All items' cross loadings were fixed at zero. CWB-O and CWB-P were posited as latent variables measured by the items as in Table 4: also in this case all items' cross loadings were fixed at zero. The three independent latent variables were allowed to freely covariate, as well as the two disturbances of the two latent dependent variables. WLSMV robust estimators were used due to severe non-normality of CWB measure. Goodness of fit indices indicated a good fit of the model to the data: $\chi^2(1024, N = 850) = 1200$, $p < .001$, $RMSEA = .028$ [90% Confidence interval: $LL = .026$, $UL = .030$, $p(RMSEA \leq .05) = 1$], CFI and TLI both equal to .93, and $WRMR = 1.27$. Factor loadings for IC items ranged from .64 to .72 with an average of .68; factor loadings for QW items ranged from .67 to .86 with an average of .77; factor loadings for IC items ranged from .54 to .76 with an average of .66. Reliability estimates for the three scales derived by means of Cronbach's alpha were equal to .78, .88 and .90 respectively for IC, QW, and OC, with item total corrected correlations ranging respectively from .49 to .63 (average = .59), .64 to .75 (average = .72), and .53 to .70 (average = .63).

Figure 1 gives a graphical representation of the structural part of the model: IC and OC exert approximately the same amount of significant impact on CWB-O, while QW has a non-significant impact. IC is the main predictor of CWB-P, while OCS has a marginal non-significant impact and QW a slightly significant negative impact. It is noteworthy that QW zero-order correlations of QW with CWB-O and CWB-P are both positive although statistically non significant, being respectively .06 and .03; accordingly the negative direction of the structural coefficients linking QW to CWB-O and CWB-P is mainly due to a suppression effect due to the intercorrelation among QW, IC and OC. Finally, the model explains about 14% of CWB-O variance and about 26% of CWB-P variance.

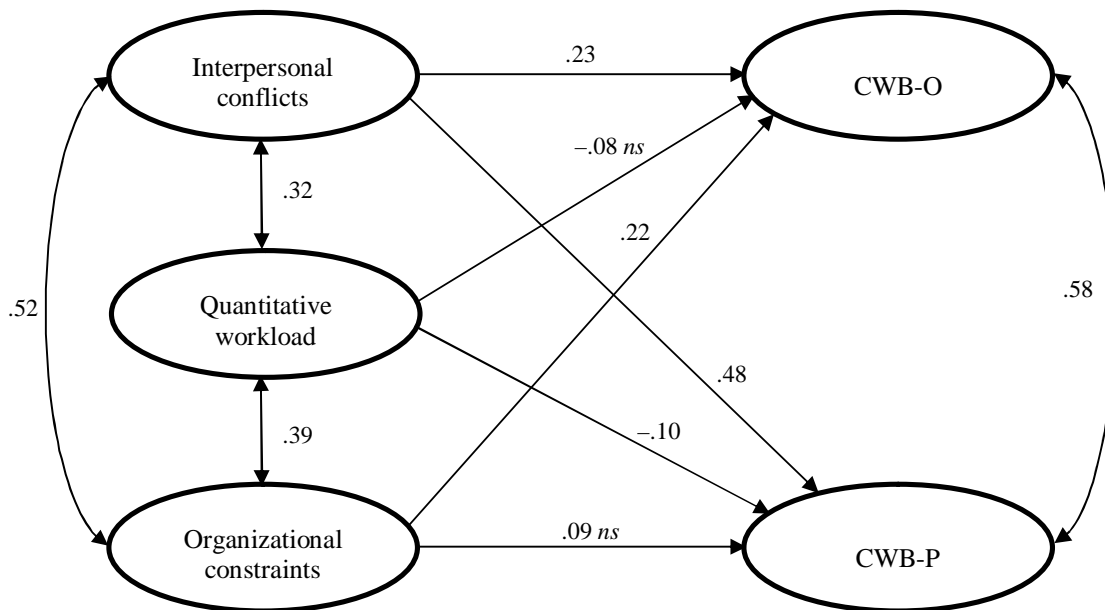


FIGURE 1
 Structural model linking stressors to CWBs.

DISCUSSION

The purpose of this study was to investigate the dimensionality and the validity of Spector and Fox's CWB-C in an Italian sample within the framework of stressor emotion model. Overall, our results are in line with previous literature, suggesting the presence of two underlying dimensions of CWB (Robinson & Bennett, 1995; Spector & Fox, 2002). Our study showed that the items of CWB-C grouped into two categories according to the target of the behavior, specifically CWB-O, directed toward organization, and CWB-P, directed toward people. In fact, as in literature (Bruk-Lee & Spector, 2006; Fox et al., 2001; Penney & Spector, 2005), the items reflecting behaviors such as taking excessive breaks, working on a personal matter instead of working for the employer, or intentionally working slowly loaded together on a factor (CWB-O), while items reflecting acts of aggression toward fellow coworkers, such as verbal insults, spreading false rumors about others, and withholding crucial information from others clustered together on another factor (CWB-P).

It is remarkable that not all the items, which according to Paul Spector are intended to measure CWB-O or CWB-P, showed to function well in our analyses. In particular, of the 43 items that Spector classified under CWB-O or CWB-P, 16 did not show up as adequate in CFA or in EFA, resulting with high modification indices (when CFA is considered), or with primary high loadings on a factor different from the intended one (e.g., a CWB-P item loading on the CWB-O factor, or the reverse), or with non-negligible secondary loadings (when EFA is considered). This situation was further worsened by the presence of a high correlation between the CWB-P and CWB-O factors in both EFA and CFA, thus tending to blur the discriminant validity of these two latent dimensions. Once the items with the aforementioned behavior had been excluded from the analysis, a much clearer situation appeared in terms of goodness of fit, factorial

structure and discriminant validity. The 16 eliminated items were equally balanced between the two facets of CWB. Interestingly, all five subscales derivable from part of the CWB-C items, measuring typical actions described by specific behavior such as abuse, production deviance, sabotage, theft and withdrawal (Fox & Spector, 1999; Spector et al., 2006) are represented in the 27 selected items, with at least two items per subscale. We may ponder the possibility that the excluded items share a stronger influence from a general method factor, or from a more specific socially desirable factor. Unfortunately, a measure of social desirability was not included in the questionnaire devised for this study: accordingly this topic could be addressed by further research.

Considering the results for the reduced 27-item CWB-C, the two latent dimensions of CWB-O and CWB-P still present high and significant correlation, but less than 40% of variance is shared by these two factors, suggesting that most of the eliminated items contributed to blur the distinction between CWB toward organization and CWB toward people. The two main facets of CWB are still correlated but separable. It is clear from our results that people who tend to react counterproductively toward the organization tend to show the same behavior toward people (and the reverse), however this is only a tendency, the correlation among these facets being far from perfect. In fact, an alternative model positing a single primary factor underlying the items was not supported vis a vis the empirical data. However, the high although non perfect correlation between CWB-P and CWB-O evidences the presence of a common root for these two different kinds of CWB, compatible with the theoretical model described by Sackett and DeVore (2002). Notwithstanding, the two CWB facets showed up with an interestingly different pattern of association with diverse work stressors. While interpersonal conflicts resulted primarily associated with CWB-P, organizational constraints resulted primarily associated with CWB-O. While these two facets may have a common root, they are by the way undoubtedly diverse, and this difference is relevant for practical and theoretical purposes. These associations between the two CWB dimensions and some of the stressor emotion model constructs are consistent with the framework of stressor emotion model, where:

- a) interpersonal conflict resulted positively linked to both organizational and interpersonal types of CWB (Bruk-Lee & Spector, 2006) and even more with CWB-P (Fox et al., 2001; Spector et al., 2006);
- b) organizational constraints were positively related to CWB-O (Fox et al., 2001; Spector et al., 2006);
- c) workload resulted in a low association with both CWBs (Krischer et al., 2010; Spector & Jex, 1998).

In conclusion, the Italian version of CWB checklist and its two broad dimensions is in accord with Spector and Fox's theorizing regarding the CWB and their stressor emotion model. Furthermore, the scale and its two subscales have also been described and used in many studies but in this study the empirical two-factor structure is supported by empirical evidence, thus providing support for its utility in organizational research. This study can represent a further contribution to both national and international research. Regarding the use of the CWB-C with Italian-speaking samples, the results suggested that it is a rather reliable and valid measure of CWB. At the international level, the study provides evidence regarding the validation of CWB-C as conceptualized by Spector and Fox, by confirming its two-dimensional structure.

Some limits of the present study need to be noted. Although the sample size was considerable, we used a convenience sample that cannot be representative of the Italian workers. It is questionable whether our results can be extended to populations outside of Italy, or to a different culture. Another limitation of this research is the use of self-report instruments: however, Fox Spector, Goh, and Bruursema (2007) demonstrated the convergence between self- and peer-reports of the majority of stressor emotion model measures. Moreover, only part of the nomological network involving CWB in stressor emotion model was tested. Negative emotions were not examined, but this should be the focus of future research. Examining a larger nomological network, including negative emotions, would provide more understanding and validity of CWB-C and its subscales.

REFERENCES

- Beehr, T. A., & Bhagat, R. S. (1985). *Human stress and cognition in organizations: An integrated perspective*. New York, NY: John Wiley & Sons.
- Bowling, N. A., & Eschleman, K. J. (2010). Employee personality as a moderator of the relationships between work stressors and counterproductive work behavior. *Journal of Occupational Health Psychology, 15*(1), 91-103. doi:10.1037/a0017326
- Bollen, K. A. (1989). *Structural equations with latent variables*. New York, NY: Wiley.
- Bruk-Lee, V., & Spector, P. (2006). The social stressors-counterproductive work behaviors link: Are conflicts with supervisors and co-workers the same? *Journal of Occupational Health Psychology, 11*, 145-156. doi:10.1037/1076-8998.11.2.145
- Chappell, D., & Di Martino, V. (2006). *Violence at work* (3rd ed.). Geneva, Switzerland: International Labour Office.
- Chen, P. Y., & Spector, P. E. (1992). Relationships of work stressors with aggression, withdrawal, theft and substance use: An exploratory study. *Journal of Occupational and Organizational Psychology, 65*, 177-184.
- Flora, D. B., & Curran, P. J. (2004). An empirical evaluation of alternative methods of estimation for confirmatory factor analysis with ordinal data. *Psychological Methods, 9*, 466-491. doi:10.1037/1082-989X.9.4.466
- Fox, S., & Spector, P. E. (1999). A model of work frustration-aggression. *Journal of Organizational Behavior, 20*(6), 915-931. doi:10.1002/(SICI)1099-1379(199911)20:6<915::AID-JOB918>3.0.CO;2-6
- Fox, S., Spector, P. E., Goh, A., & Bruursema, K. (2007). Does your coworker know what you're doing? Convergence of self- and peer-reports of counterproductive work behavior. *International Journal of Stress Management, 14*, 41-60. doi:10.1037/1072-5245.14.1.41
- Fox, S., Spector, P. E., & Miles, D. (2001). Counterproductive work behavior (CWB) in response to job stressors and organizational justice: Some mediator and moderator tests for autonomy and emotions. *Journal of Vocational Behavior, 59*(3), 291-309. doi:10.1006/jvbe.2001.1803
- Gruys, M. L., & Sackett, P. R. (2003). Investigating the dimensionality of counterproductive work behavior. *International Journal of Selection and Assessment, 11*, 30-41. doi:10.1111/1468-2389.00224
- Hoyle, R. H., & Panter, A. T. (1995). Writing about structural equation models. In R. H. Hoyle (Ed.), *Structural equation modeling: Concepts, issues, and applications* (pp. 158-176). Thousand Oaks, CA: Sage Publications.
- Krischer, M. M., Penney, L. M., & Hunter, E. M. (2010). Can counterproductive work behaviors be productive? CWB as emotion-focused coping. *Journal of Occupational Health Psychology, 15*(2), 154-166. doi:10.1037/a0018349
- MacCallum, R. C., Roznowski, M., Mar, C. M., & Reith, J. V. (1994). Alternative strategies for cross-validation of covariance structure models. *Multivariate Behavioral Research, 29*(1), 1-32.
- Muthén, B., & Kaplan, D. (1985). A comparison of some methodologies for the factor analysis of non-normal Likert variables. *British Journal of Mathematical and Statistical Psychology, 38*, 171-189. doi:10.1111/j.2044-8317.1985.tb00832.x
- Muthén, L. K., & Muthén, B. O. (2013). *Mplus User's Guide* (6th ed.). Los Angeles, CA: Author.
- Penney, L. M., & Spector, P. E. (2005). Job stress, incivility, and counterproductive workplace behavior (CWB): The moderating role of negative affectivity. *Journal of Organizational Behavior, 26*(5), 777-796. doi:10.1002/job.336

-
- Peters, L. H., & O'Connor, E. J. (1980). Situational constraints and work outcomes: The influences of a frequently overlooked construct. *Academy of Management Review*, 5(3), 391-397. doi:10.5465/AMR.1980.4288856
- Robinson, S. L., & Bennett, R. J. (1995). A typology of deviant workplace behaviors: A multidimensional scaling study. *Academy of Management Journal*, 38, 555-572. doi:10.2307/256693
- Sackett, P. R., & DeVore, C. J. (2002). Counterproductive behaviors at work. In N. Anderson, D. S. Ones, H. K. Sinangil, & V. Viswesvaran (Eds.), *Handbook of industrial, work, and organizational psychology* (Vol. 1, pp. 145-164). London: Sage.
- Salgado, J. F. (2002). The big five personality dimensions and counterproductive behaviors. *International Journal of Selection and Assessment*, 10, 117-125. doi:10.1111/1468-2389.00198
- Spector, P. E. (1975). Relationships of organizational frustration with reported behavioral reactions of employees. *Journal of Applied Psychology*, 60, 635-637. doi:10.1037/h0077157
- Spector, P. E. (1978). Organizational frustration: A model and review of the literature. *Personnel Psychology*, 31(4), 815-829. doi:10.1111/j.1744-6570.1978.tb02125.x
- Spector, P. E., & Fox, S. (2002). An emotion-centered model of voluntary work behavior: Some parallels between counterproductive work behavior (CWB) and organizational citizenship behavior (OCB). *Human Resources Management Review*, 12, 269-292. doi:10.1016/S1053-4822(02)00049-9
- Spector, P. E., & Fox, S. (2005). A model of counterproductive work behavior. In S. Fox & P. E. Spector (Eds.), *Counterproductive workplace behavior: Investigations of actors and targets* (pp. 151-174). Washington, DC: APA.
- Spector, P. E., Fox, S., Penney, L. M., Bruursema, K., Goh, A., & Kessler, S. (2006). The dimensionality of counterproductivity: Are all counterproductive behaviors created equal? *Journal of Vocational Behavior*, 68, 446-460. doi:10.1016/j.jvb.2005.10.005
- Spector, P. E., & Jex, S. M. (1998). Development of four self-report measures of job stressors and strain: Interpersonal Conflict at Work Scale, Organizational Constraints Scale, Quantitative Workload Inventory, and Physical Symptoms Inventory. *Journal of Occupational Health Psychology*, 3, 356-367.
- Thompson, B. (1994). The pivotal role of replication in psychological research: Empirically evaluating the replicability of sample results. *Journal of Personality*, 62, 157-179. doi:10.1037/1076-8998.3.4.356
- Vardi, Y., & Weitz, E. (2004). *Misbehavior in organizations*. Mahwah, NJ: Lawrence Erlbaum.
-

APPENDIX

Italian Version of the Scales Used in the Study

(For information about the original items see <http://shell.cas.usf.edu/~pspector/scalepage.html>)

CWB-C Check-list

Con quale frequenza ha fatto ognuna delle seguenti cose nel suo attuale lavoro

1. Ha sprecato di proposito materiali di lavoro di proprietà del suo datore di lavoro
2. Ha sognato ad occhi aperti invece di lavorare
3. Si è lamentato/a per cose insignificanti
4. Ha detto a persone esterne alla sua azienda che lavora in un posto orrendo
5. Ha eseguito di proposito il lavoro in maniera non corretta
6. È arrivato/a al lavoro in ritardo senza autorizzazione
7. Non è andato/a al lavoro comunicando di essere ammalato/a quando invece stava bene
8. Ha danneggiato di proposito un pezzo di un'apparecchiatura o di un'altra proprietà dell'azienda
9. Ha sporcato di proposito o lasciato rifiuti sul posto di lavoro
10. Ha rubato cose di proprietà del suo datore di lavoro
11. Ha iniziato o continuato una diceria dannosa sul posto di lavoro
12. È stato/a scortese nei confronti di un cliente o di un utente
13. Ha di proposito eseguito il suo lavoro lentamente quando c'era bisogno che le cose venissero fatte in tempi adeguati
14. Ha rifiutato un compito che le veniva richiesto
15. È arrivato/a di proposito in ritardo ad un appuntamento o ad una riunione
16. Ha omesso di riferire un problema in modo che peggiorasse
17. Ha fatto una pausa più lunga di quanto autorizzato
18. Non ha eseguito di proposito le istruzioni
19. Ha lasciato il posto di lavoro in anticipo rispetto all'orario previsto senza autorizzazione
20. Ha offeso qualcuno per la sua prestazione di lavoro
21. Si è preso/a gioco delle faccende personali di qualcuno
22. Ha portato a casa materiali o strumenti di lavoro senza autorizzazione
23. Ha cercato di sembrare impegnato/a quando in realtà non faceva nulla
24. Ha cercato di farsi pagare un numero di ore di lavoro maggiore di quello che ha effettuato
25. Ha preso denaro del datore di lavoro senza autorizzazione
26. Ha ignorato qualcuno
27. Si è rifiutato/a di aiutare qualcuno
28. Ha sottratto a qualcuno delle informazioni di cui aveva bisogno
29. Ha di proposito interrotto qualcuno che stava svolgendo il suo compito
30. Ha incolpato qualcun altro per errori che lei ha commesso
31. Ha dato inizio ad una discussione con qualcuno
32. Ha rubato qualcosa che apparteneva a qualcuno
33. Ha insultato qualcuno
34. Ha fatto un gesto osceno (ad esempio, mostrato il dito medio) a qualcuno
35. Ha minacciato con violenza qualcuno
36. Ha minacciato qualcuno ma non fisicamente
37. Ha detto cose oscene a qualcuno per farlo sentire male
38. Ha nascosto qualcosa affinché qualcuno non riuscisse a trovarla
39. Ha fatto qualcosa per far sembrare qualcuno cattivo
40. Ha fatto uno scherzo volgare per mettere qualcuno in imbarazzo
41. Ha distrutto cose che appartenevano a qualcuno
42. Ha guardato la posta o le cose private di qualcuno senza autorizzazione
43. Ha colpito o spinto qualcuno
44. Ha insultato o si è preso/a gioco di qualcuno
45. Ha evitato di richiamare al telefono qualcuno che avrebbe dovuto chiamare

ICAWS

Con quale frequenza ognuno di tali eventi è accaduto nel suo attuale lavoro?

1. Quante volte le capita di discutere con gli altri?
2. Quante volte gli altri le urlano contro?
3. Quante volte la gente è maleducata con lei?
4. Quante volte gli altri le fanno cose cattive?

QWI

Con quale frequenza ognuno di tali eventi è accaduto nel suo attuale lavoro?

1. Quante volte accade che il suo lavoro le richieda di lavorare molto velocemente?
2. Quante volte accade che il suo lavoro le richieda di lavorare duramente?
3. Quante volte le capita che il suo lavoro le lasci poco tempo a disposizione per finire le cose che deve fare?
4. Quante volte al lavoro ci sono tantissime cose da fare?
5. Quante volte le capita di avere più lavoro di quanto ne potrebbe svolgere bene?

OCS

Quante volte trova difficile o impossibile fare il suo lavoro a causa degli eventi indicati di seguito?

1. Scarse apparecchiature o forniture
 2. Regole e procedure organizzative
 3. Altri dipendenti
 4. Il suo supervisore o il suo capo
 5. Mancanza di materiale o di forniture
 6. Formazione inadeguata
 7. Interruzione da parte di altre persone
 8. La mancanza di informazioni necessarie su come e cosa fare
 9. Richieste di lavoro conflittuali
 10. Inadeguato aiuto da parte degli altri
 11. Istruzioni sbagliate
-