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# HOW COOPERATIVENESS AND COMPETITIVENESS INFLUENCE STUDENT BURNOUT: THE MODERATING EFFECT OF NEUROTICISM

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We examined how being cooperative and competitive influence student burnout (i.e., students' exhaustion, cynicism, and diminished professional efficacy) and the moderating role of neuroticism. First- and second-year university students ($N$ = 257) completed the measures of cooperativeness, competitiveness, neuroticism, and student burnout. Results show that cooperativeness had a negative correlation with each of the dimensions of burnout. Competitiveness did not have a negative correlation. For an individual with high neuroticism, cooperativeness did not contribute to professional efficacy but competitiveness tended to counteract any diminishing professional efficacy.

*Keywords:* cooperativeness, competitiveness, student burnout, neuroticism.

People who work in the human services domain are likely to suffer from emotional exhaustion, depersonalization, and reduced personal accomplishment, a syndrome that is described as *burnout* (Zalaquett & Wood, 1997). As Maslach

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and Jackson (1986) defined it, *emotional exhaustion* describes the phenomenon of *workers feeling they have run out of emotional resources, and as a result, are no longer able to devote their psychological resources to their jobs*. *Depersonalization* reflects *employees' negative and distant attitudes and feelings about their clients*. *Reduced personal accomplishment* describes *employees' tendency to evaluate themselves and their job achievement negatively*.

Researchers developed the Maslach Burnout Inventory–General Survey (MBI-GS; Schaufeli, Leiter, Maslach, & Jackson, 1996), for application in situations where people may suffer from burnout not only while dealing with clients, but also in general work. In the MBI-GS, *exhaustion* describes *general weariness of work, which does not necessarily refer to clients*; *cynicism* refers to *unenthusiastic and pessimistic attitudes about one's work in general, which is not necessarily associated with clients*; *professional efficacy* consists of *both social and nonsocial aspects of work-related achievement, which is much broader than the original reduced personal accomplishment* (Schaufeli et al., 1996).

Along with the development of instruments to measure burnout, researchers' focus has expanded from occupations in the human-service domain, such as flight attendants (Liang & Hsieh, 2007), health care professionals (Muscatello et al., 2006), university teachers (Zhong et al., 2009), municipal officers (Varhama et al., 2010), and correctional staff (Lambert & Hogan, 2010) to occupations in which those involved do not deal directly with clients, such as athletes (Chen, Chen, Kee, & Tsai, 2008), highly educated researchers (Singh, Dalal, & Mishra, 2004), and students (Parker & Salmela-Aro, 2011). College students can easily suffer from burnout, which may lead to serious psychological and physical problems. In order to devise strategies for reducing student burnout, it is necessary for researchers to pay more attention to its antecedents.

Burnout is viewed as a reaction to a high level of work-related demands and a lack of work-related resources (see e.g., Kouvonen, Toppinen-Tanner, Kivistö, Huuhtanen, & Kalimo, 2005; Schaufeli & Buunk, 2003). But it has also been found that some individuals are more susceptible than others to burnout (Lavanco, 1997; Pisarik, 2009; Schaufeli & Buunk, 2003). Because student burnout can be viewed as a response to the difficulties in coping with school achievement pressures (Parker & Salmela-Aro, 2011), the orientation and style by which individuals work in order to achieve are likely to influence their perceptions of working or studying conditions. However, we have not been able to locate any previous study in which the focus has been on how individual achievement orientations – that is, stable dispositions toward achievement – are associated with student burnout. Thus, in this study we examined the role of cooperativeness and competitiveness, two primary constructs of achievement orientation (Ross, Rausch, & Canada, 2003). We also explored how neuroticism moderates the cooperativeness-burnout and competitiveness-burnout relationships.

*Cooperativeness* can be defined as *liking to work together with others to achieve the same goal*. During this process, an individual will consider the benefits of working with others and experience the happiness that comes from interpersonal harmony (Xie, Yu, Chen, & Chen, 2006, p. 117). *Competitiveness* is conceptualized as "*the desire to surpass others during the process of scoping out one's potential, developing oneself, and achieving some kind of goal*" (Xie et al., 2006, p. 117). Although we could not find any direct empirical evidence about how cooperativeness and competitiveness impact student burnout, there is some indirect evidence. Previous researchers have demonstrated that cooperativeness can reduce nurses' burnout (Ushiro & Nakayama, 2010). They posited that a cooperative work environment is good for avoiding burnout. Cooperativeness increases an individual's actual cooperation in the workplace and, thus, leads to more social support and interpersonal help and encouragement. Therefore, we proposed the following hypothesis:

***Hypothesis 1:*** Cooperativeness will be negatively correlated with student burnout (i.e., exhaustion, cynicism, and diminished professional efficacy).

With regard to competitiveness, Karatepe and Olugbade (2009) found that competitiveness, as a personal resource, was associated with higher work engagement, which is the direct opposite of burnout (Maslach & Leiter, 1997). People who are highly competitive like to compete with others and are eager to win. They display greater self-efficacy and better performance (Brown, Cron, & Slocum, 1998; Karatepe & Olugbade, 2009), which may help reduce burnout. Based on these findings, we proposed the following hypothesis:

***Hypothesis 2:*** Competitiveness will be negatively correlated with student burnout (i.e., exhaustion, cynicism, and diminished professional efficacy).

A person displaying *neurotic* behavior is typically *tense, emotionally unstable, and insecure* (McCrae & Costa, 1987). Previous researchers have shown how neuroticism increases burnout and reduces work engagement (Kim, Shin, & Swanger, 2009). We examined the direct influence of neuroticism on students' burnout, and also whether the impact of cooperativeness and competitiveness on diminished professional efficacy (DPE) was moderated by neuroticism. For those high in neuroticism, confidence and self-value gained from social support and interpersonal cooperation are easily destroyed because social support and interpersonal cooperation do not contribute to winning or solid accomplishment. Thus, the effect of cooperativeness as a buffer against DPE is weaker for those people. On the other hand, competitiveness tends to improve individuals' performance and achievement (Brown et al., 1998). Neuroticism, therefore, strengthens the negative correlation between competitiveness and DPE. Based on the above discussion, we proposed:

***Hypothesis 3:*** Neuroticism will moderate the relationship between cooperativeness and DPE. The negative cooperativeness-DPE correlation will be weaker for people with high neuroticism.

***Hypothesis 4:*** Neuroticism will moderate the relationship between competitiveness and DPE. The negative competitiveness-DPE correlation will be stronger for people with high neuroticism.

## Method

### Participants

First- and second-year university students ($N$ = 257) participated in the study for course credit in the second semester of the academic year 2009-2010. All participants were studying at Hangzhou Normal University. Among the students, 32 (12.5%) were male and 225 (87.4 %) were female. The mean age was 20.53 ($SD$ = 1.55).

### Materials and Procedure

Student burnout was measured using a slightly modified version of the MBI-GS (Schaufeli et al., 1996). Expressions such as "work" and "job" were changed to "study", and "company" was changed to "college". The Chinese revised version of the MBI-GS (Li & Shi, 2003) contains 15 items with three dimensions – exhaustion (5 items; alphas = .81), cynicism (4 items; alphas = .82), and diminished personal efficacy (6 items; alphas = .82). Students were rated on a 7-point scale (1 = *never experienced* to 7 = *experienced daily*). The mean score for each subscale was used for data analysis.

We used the Chinese Cooperative and Competitive Personality Scale (CCPS; Xie et al., 2006) to measure the participants' cooperativeness and competitiveness. The CCPS contains 23 items. Participants were rated on a 7-point scale (1 = *strongly disagree* to 7 = *strongly agree*). The cooperativeness subscale contains 13 items (alphas = .76). One example of the items is "It makes me very happy to work together with everyone". The competitiveness subscale contains 10 items (alphas = .72). One example is "It makes me irritated if someone else performs better than I do".

Neuroticism was measured using the neuroticism subscale of the Big Five mini-marker scales (Saucier, 1994), a shortened version of Goldberg's (1992) longer adjective scales. The neuroticism scale contains eight adjectives (alphas = .71). Participants rated each adjective on 5-point scale (1 = *very unsuitable for describing me* to 5 = *very suitable for describing me*).

## Results

Correlations among variables are presented in Table 1. Cooperativeness, as proposed in Hypothesis 1, was negatively associated with the three dimensions of burnout (exhaustion, cynicism, and diminished personal efficacy). On the other

hand, the correlation between competitiveness and burnout was not significant, so Hypothesis 2 was not supported. Neuroticism was positively correlated with the three dimensions of burnout.

Table 1. *Descriptive Statistics and Correlations of Variables*

| | *M* | *SD* | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|---|
| 1. Cooperativeness | 5.50 | .68 | | | | | |
| 2. Competitiveness | 4.25 | .83 | .16* | | | | |
| 3. Neuroticism | 2.60 | .54 | -.24** | .29** | | | |
| 4. Exhaustion | 2.65 | .85 | -.12* | .11 | .36** | | |
| 5. Cynicism | 2.72 | .99 | -.14* | .08 | .25** | .66** | |
| 6. DPE | 2.99 | .86 | -.36** | -.06 | .29** | .33** | .42** |

*Notes:* * $p < .05$, ** $p < .01$. DPE = diminished personal efficacy.

Table 2. *The Moderating Effect of Neuroticism*

| | Exhaustion | | Cynicism | | DPE | |
|---|---|---|---|---|---|---|
| | β | $\Delta R^2$ | β | $\Delta R^2$ | β | $\Delta R^2$ |
| Step 1 | | .01 | | .03* | | .04** |
| Age | .09 | | .15* | | .14* | |
| Gender | .02 | | .03 | | .13* | |
| Step 2 | | .13*** | | .07** | | .16*** |
| Age | .06 | | .13* | | .13* | |
| Gender | -.02 | | .00 | | .07 | |
| Cooperativeness | -.04 | | -.10 | | -.30*** | |
| Competitiveness | .02 | | .04 | | -.06 | |
| Neuroticism | .35*** | | .21** | | .21** | |
| Step 3 | | .01 | | .01 | | .06*** |
| Age | .07 | | .14* | | .14* | |
| Gender | -.03 | | -.01 | | .06 | |
| Cooperativeness | -.03 | | -.09 | | -.27*** | |
| Competitiveness | .01 | | .04 | | -.09 | |
| Neuroticism | .37*** | | .23** | | .24*** | |
| Cooperativeness × Neuroticism | .01 | | -.05 | | .13* | |
| Competitiveness × Neuroticism | -.10 | | -.06 | | -.22*** | |

*Notes:* * $p < .05$, ** $p < .01$. DPE = diminished personal efficacy.

To test Hypotheses 3 and 4, hierarchical regression analyses were performed. Criterion variables were emotional exhaustion, depersonalization, and diminished personal accomplishment. Predictor variables were gender, age (in the first step), cooperativeness, competitiveness, neuroticism (in the second step), cooperativeness × neuroticism, and competitiveness × neuroticism (in the third step). All continuous predictors were centered (Aiken, West, & Reno, 1991). Results

show that the cooperativeness × neuroticism and competitiveness × neuroticism interactions in the model predicting DPE were statistically significant.

We explored the cooperativeness-DPE and competitiveness-DPE relationships among people with low (i.e., one *SD* below the mean score) vs. medium (i.e., the mean score) vs. high (i.e., one *SD* above the mean score) neuroticism using simple slope tests. We found that, among students with low and medium levels of neuroticism, cooperativeness was negatively correlated with DPE, $t(250) = 4.82$, $p < .001$ (low neuroticism), and $t(250) = 3.34$, $p < .001$ (medium neuroticism). However, among those with high neuroticism, cooperativeness was not significantly associated with DPE, $t(250) = 1.82$, $p > .05$. H3 was supported.

Furthermore, among students with high neuroticism, competitiveness was negatively correlated with DPE, $t(250) = 3.42$, $p < .001$. However, among those with low and medium neuroticism, competitiveness was not significantly associated with DPE, $t(250) = 1.28$, $p > .05$ (low neuroticism), and $t(250) = 1.45$, $p > .05$ (medium neuroticism). Hypothesis 4 was supported.

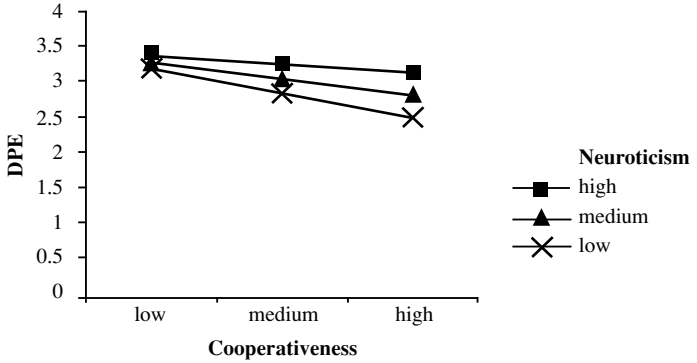


Figure 1. *The moderating effect of neuroticism on the cooperativeness-DPE relationship.*

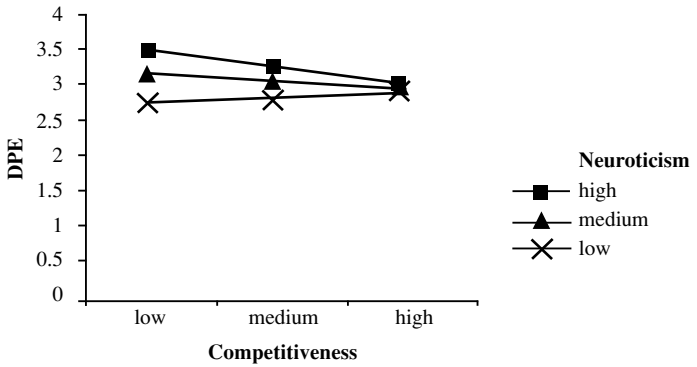


Figure 2. *The moderating effect of neuroticism on the competitiveness-DPE relationship.*

## Discussion

In this study, we demonstrated that individuals who were disposed to cooperate with others in the university environment suffer from burnout less than do those who were not disposed to cooperate with others. However, being competitive did not help prevent burnout, which did not support our hypothesis that competitiveness would be negatively correlated with student burnout. Neuroticism directly increased student burnout. Moreover, neuroticism weakened the buffering effect of cooperativeness and strengthened the buffering effect of competitiveness. That is, for people with low (but not high) neuroticism, cooperativeness led to less DPE; for people with high (but not low) neuroticism, competitiveness resulted in less DPE. These findings indicate that for students who are highly competitive, neuroticism could also have positive implications.

The positive effect of cooperativeness is consistent with the idea that a cooperative work environment is good for preventing burnout. In the job demands-resources (JD-R; Llorens, Bakker, Schaufeli, & Salanova, 2006) model it is suggested that chronic job demands lead to burnout, but presence of job resources, such as social support, result in work engagement (Bakker & Demerouti, 2007). Individual cooperativeness leads that person to focus on harmony in working conditions, which makes him/her able to gain interpersonal help from a cooperative environment in order to make the job easier and less demanding. As a result, a cooperative individual is able to deal with the job demands while not suffering from burnout. A similar phenomenon may occur in colleges and a highly cooperative student is less likely than others to suffer from burnout.

We did not find any positive buffering effect of competitiveness on burnout. Although previous researchers have found that competitiveness increased individuals' work engagement (Karatepe & Olugbade, 2009), according to the JD-R model antecedents of work engagement are not necessarily antecedents of burnout (Llorens et al., 2006). Strong motivation to succeed and win can increase the personal resources devoted to the work. However, increasing personal resources does not reduce the job demands. Therefore, trait competitiveness has been found to be positively associated with work engagement (Karatepe & Olugbade, 2009) but not negatively associated with burnout.

We found that neuroticism had a direct effect on student burnout. That is, students high in neuroticism suffered from higher levels of exhaustion, cynicism, and DPE. This finding is consistent that of Kim et al. (2009). Moreover, in this study, we demonstrated a moderating effect of neuroticism. On the one hand, neuroticism decreased the positive effect of cooperativeness on DPE because self-confidence and self-value gained from interpersonal harmony may easily be destroyed when the individual is not emotionally stable. On the other

hand, neuroticism strengthened the positive effect of competitiveness on DPE. Competitiveness was negatively correlated with DPE only for those with high neuroticism because competitiveness increased the possibility of winning and, as a result, it increased students' self-value, especially for those students whose neuroticism was high and whose emotional condition could easily change.

All data in this study were collected at one point in time, which may lead to common method bias. Future researchers could collect data from different resources and at different time points. In this research, our main focus was on the influence of individual characteristics on student burnout. An individual's cooperativeness or competitiveness may interact with environmental factors (e.g., cooperation and competitive working conditions), and then influence their burnout. Future researchers could investigate the interaction effect of traits and environments, which may help to increase understanding of how student burnout develops.

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