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Impact of Motivational Climates on Claimed Self-Handicapping Strategies: Illustration in  
Tropical Environment

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### Abstract

The purpose of the present study was to quantitatively and qualitatively examine whether claimed self-handicapping is increased in a performance motivational climate (PMC) compared with a mastery motivational climate (MMC) within a strictly controlled tropical environment. Participants completed measures of self-handicapping using open-ended questions before a physical test. The analyses revealed that (a) participants who engage in self-handicapping strategy were more numerous, (b) the number of self-handicap reported self-handicap score were greater, (c) participants who engage in self-handicapping strategy reported more impediments in the PMC as compared with MMC. Information about the nature of self-handicapping claims is also provided.

*Keywords:* claims, mastery climate, performance climate, tropical environment



1 self-esteem. They also showed that self-affirmed athletes have decreased levels of claimed  
2 self-handicapping.

### 3 **Motivational Climates Influence Claimed Self-Handicapping**

4 Self-handicapping strategies can also be influenced by the motivational climate  
5 (Coudeville, Martin Ginis, Famose, & Gernigon, 2009; Kuczka & Treasure, 2005;  
6 Ntoumanis, Thøgersen-Ntoumanis, & Smith, 2009; Standage, Treasure, Hooper, & Kuczka,  
7 2007). The concept of motivational climate (Ames, 1992) refers to the saliency of mastery  
8 (task) and performance (ego) cues in an achievement setting and is derived from achievement  
9 goal theory (Ames, 1984; Dweck, 1986; Nicholls, 1989). According to this theory, the  
10 demonstration of ability is the goal of action in achievement settings. In a mastery-oriented  
11 motivational climate, evaluations of one's performance are self-referenced and success is  
12 defined as mastering a task. In contrast, in a performance-oriented motivational climate,  
13 performance evaluations are based on social comparisons and success is defined in terms of  
14 out-performing others (Ames & Archer, 1988).

15 Only two studies have experimentally manipulated motivational climates to examine  
16 the effects on claimed self-handicapping (Coudeville et al., 2009; Standage et al., 2007).  
17 Within a skill test, Coudeville and colleagues showed that male basketball players used more  
18 claims self-handicaps in the condition of PMC than in the condition of MMC. In the context  
19 of a physical education class, Standage and his colleagues found that adolescent students  
20 reported more self-handicaps before performing an endurance-running task in a performance-  
21 oriented motivational climate than in a task-oriented motivational climate. According to these  
22 authors, the adolescent students exposed to performance-involving cues become preoccupied  
23 with their comparative ability (i.e., not appearing unable or appearing able), making self-  
24 handicapping more likely as a self-protective strategy to deflect attention away from a lack of  
25 ability (Midgley & Urdan, 2001; Urdan & Midgley, 2001). Although PMC is known to

1 stimulate self-handicapping, there seems to be a major gap in the literature as the  
2 measurements methods that have been used to date may have prompted the participants to  
3 self-handicap.

#### 4 **Possible Influences of Methods of Assessment on Claimed Self-Handicapping**

5 Self-handicapping has been explored as a trait (e.g., Lung, Chia-Huei, Ying, Meng-  
6 Shyan, & Shang-Hsueh, 2009; Ommundsen, 2001, 2004), a state (e.g., Finez & Sherman,  
7 2012; Kuczka & Treasure, 2005; Martin & Brawley, 2002), and both (e.g., Carron,  
8 Prapavessis, & Grove, 1994; Hirt et al., 1991; Ryska, Yin, & Cooley, 1998). Regarding self-  
9 handicapping conceptualized as a state, several studies have used a scale with a list of several  
10 impediments (e.g., Coudevylle, Gernigon, & Martin Ginis, 2011; Coudevylle, Martin Ginis,  
11 Famose, & Gernigon, 2008b; Coudevylle et al., 2009; Standage et al., 2007; Martin &  
12 Brawley, 2002). Other studies (for a review, Coudevylle, Gernigon, Martin Ginis, & Famose,  
13 in press; Prapavessis, Grove, & Eklund, 2004) have employed an “*open-ended*” response  
14 format similar to that of Carron et al. (1994), who asked male athletes from a variety of team  
15 sports to list any events that had disrupted their preparation for competition during the past  
16 week. Prapavessis and colleagues (2004) classified the cited obstacles and observed that  
17 those most frequently cited were school activities/commitments (30.5%) and physical  
18 state/injury/illness (20.5%), which tend to be situational, uncontrollable, and/or socially  
19 desirable. The least frequently cited impediments were personal problems (4.9%) and  
20 conflicts with teammates or coaches (3.7%).

21 It seems reasonable to assume that proposing a list of potential impediments and  
22 asking participants which ones pertain to them could actively push them into self-  
23 handicapping. This method could prompt participants to indicate impediments that they might  
24 not mention without this invitation and, moreover, this type of question may favor social  
25 desirability bias. In order to avoid influencing participants toward self-handicapping, it seems

1 important to remain neutral, which could be achieved by asking them to indicate any “reasons  
2 (and not impediments) that would explain their ongoing good (and not only bad) or bad  
3 performance.”

#### 4 **Possible Influences of Environmental Context on Claimed Self-Handicapping**

5 To be compared, two experimental situations should differ only by the independent  
6 variable. Motivational climate may be a possible claimed self-handicap (Carron et al., 1994,  
7 Ferrand, Tetard, & Fontayne, 2006), which suggests the need to standardize this parameter  
8 between sessions to prevent differential bias in comparisons of two experimental conditions.  
9 However, previous studies on the influence of motivational climate on self-handicap have not  
10 addressed this methodological constraint (e.g., time of day, temperature, hygrometry,  
11 ventilation, light). The two experimental studies showing that claimed self-handicaps are  
12 used more in PMC than MMC (Coudeville et al., 2009; Standage et al., 2007) used methods  
13 that could reasonably be thought to stimulate self-handicapping. They also did not report high  
14 standardization of conditions between experimental sessions. Therefore, the main purpose of  
15 the present study was to determine whether the use of claimed self-handicaps—assessed  
16 using non-influencing open-ended questions—would differ across experimentally  
17 manipulated motivational climates in a strictly controlled environment. Our general  
18 hypothesis was that engagement in self-handicapping is increased in PMC relative to MMC.  
19 In this quantitative study, we tested the following hypotheses: the PMC condition is  
20 associated with (a) a greater number of reported impediments, (b) a greater number of  
21 impediments per reporter, and (c) a higher perceived impact of the reported impediments on  
22 possible failure in a motor task than the MMC condition.

#### 23 **Qualitative Approach in Self-Handicapping Strategies in Tropical Climate**

24 The experiment was conducted in the West Indies, which has a tropical climate (i.e.,  
25 hot, wet climatic environment). This climate is known to be deleterious for aerobic exercise

(Galloway & Maughan, 1997; Hue, 2011; Morris, Nevill, Lakomy, Nicholas, & Williams, 1998) but does not have a negative influence on anaerobic exercise (Racinais, Blanc, Jonville, & Hue, 2005; Racinais et al., 2006). Some of the studies on the impact of the tropical climate on performance have suggested that a hot environment modulates several psychological factors, including mood (McMorris et al., 2006) and complex (Gaoua, Grantham, Racinais, & Massoui, 2012) and simple (Cian, Barraud, Melin, & Raphel, 2001) cognitive performance, which suggests a psychological component of thermal discomfort in this climate. Physiological research has shown that aerobic exercise performance is decreased in the tropical environment (Galloway & Maughan, 1997; Hue, 2011; Morris et al., 1998) and that the pain and thermal discomfort associated with exercise is increased. However, it seems reasonable that people in an original situation encouraging comparisons of one's own performance relative to others feel their ego threatened (e.g., performance motivational climate), which might lead them to protect themselves with a strategy of overstating impediments. If this is so, perceptions of discomfort and painfulness could be overestimated in a tropical climate. We therefore investigated the nature of the self-handicaps in a physical test performed in hot and wet environment. Using a qualitative approach, the second purpose of the present study was to provide information about the nature of self-handicapping claimed in a physical test in hot-wet climatic environment. We gave particular attention to the hypothesis that tropical climate would be claimed more often in PMC than MMC, which would be interesting in our experimental setting as the participants were all acclimated.

## **Methodology**

### **Participants**

Seventy physical education students ( $M_{\text{age}} = 19$  years; age range: 18-20 years), 45 men and 25 women, participated in the study after giving written consent. All were Guadeloupian citizens living in the tropical environment throughout the year. At the beginning of each



1 session, the goal was presented (mastery vs. performance, see procedure section); the  
2 participants then all underwent two measures to assess their personal investment in the  
3 experimental task and its outcome. First, they answered a question on the importance of  
4 accomplishing the task on a 7-point Likert-type scale ranging from 1 (“not at all important”) to 7 (“completely important”). Second, they answered a question on their intention to do their  
5 best to achieve the task-related goal presented on a 7-point Likert-type scale ranging from 1  
6 (“not at all agree”) to 7 (“completely agree”). In line with the methodology of previous  
7 studies (e.g., Hausenblas & Carron, 1996; Carron, Prapavessis & Grove, 1994), we removed  
8 those participants who reported low perceived event importance from the data analyses. Only  
9 the participants who scored at least “4” on both measures were included in the present study.  
10 Of the 70 participants, 9 participants did not meet the inclusion criteria and were excluded  
11 from the study.  
12

### 13 **Measures**

14         The questions were interviewer-administered. Participants were asked individually if  
15 there were any reasons that would explain their potentially good or bad future performance  
16 (yes/no). If yes, they were asked to name them, and they were then asked to identify the  
17 extent to which each reason could promote or impair their performance by using a Likert-type  
18 scale ranging from -4 (“completely harmful”) to +4 (“completely helpful”). This measure was  
19 named “perceived impact.” After answering each question, the participants were asked to  
20 verify what the interviewer had written on the questionnaire. Then, an individual score of  
21 impediment reporting was obtained by calculating the sum of these extents. Higher scores  
22 were indicative of greater reports of performance impediments. This measure has been used  
23 in previous studies involving competitive athletes (e.g., Carron et al., 1994; Ryska et al.,  
24 1998) but by asking to indicate any “reasons (and not impediments) that could explain their  
25 ongoing good (and not only bad) or bad performance.” We then calculated the mean number

1 of impediments reported by all the participants and by only the impediment reporters.

2 Participants reporting at least one impediment to performance were categorized as

3 impediment reporters.

#### 4 **Experimental Task**

5 We worked with physical education students, some of whom were aware of the  
6 deleterious effect of tropical climate on aerobic performance. We therefore expected that they  
7 would be pushed into claiming aerobic exercise in a tropical environment as a potential  
8 impediment. To avoid this, we chose an anaerobic exercise, as we assumed it would be less  
9 likely to encourage them to claim the tropical climate as a reason for potential failure. They  
10 individually performed an isometric maximal voluntary contraction in a handgrip task. This  
11 task is mainly anaerobic and has the advantage of simplicity and high reproducibility. Thus,  
12 the participants maintained a 70% maximal voluntary contraction until exhaustion. During  
13 this contraction, participants were graphically informed of the force they were producing on a  
14 laptop screen. With regard to inter-individual comparisons, this type of exercise precludes  
15 bias caused by differences in the force production observed between the sexes.

16 Electromyograms (EMG) were obtained using MP30 equipment (Biopac Systems, Inc., Santa  
17 Barbara, CA) and BSL Pro Version 3.6.7 software (Biopac Systems, Inc.). Electrical activity  
18 was recorded with two surface electrodes.

#### 19 **Procedure**

20 The experiment was conducted during a regularly scheduled class. A crossover design  
21 was used, with all participants completing the procedure with a two-week interval between  
22 sessions, one in PMC and one in MMC. The conditions were presented in randomized order  
23 for all participants. All participants were living in the West Indies, which has a tropical  
24 climate (i.e., hot, wet climatic environment) characterized by consistently high monthly  
25 temperatures, often exceeding 18°C throughout the year, and rainfall that exceeds

1 evapotranspiration for at least 270 days per year (Hue, 2011; Salati, Lovejoy, & Vose, 1983).  
2 Thus, the tropical environment was strictly monitored in both sessions to standardize the  
3 experimental conditions. In the experimental room, the ambient temperature was 30.7 °C ( $\pm$   
4 0.9 *SD*) and the humidity was 70.0 % ( $\pm$  3.6 *SD*), and this environment was maintained by  
5 electric heating and kettle systems. The ambient light was artificial and strictly the same  
6 (fluorescent light 4000 K), and the ventilation was null. The time spent by each participant  
7 was set to 20 min.

8         **Performance motivational climate (PMC) test condition.** To increase the likelihood  
9 of self-handicapping strategies, we set a PMC (Coudeville et al., 2009; Standage et al.,  
10 2007). To do so, we emphasized results by encouraging comparisons of one's own  
11 performance relative to others, which is conceptualized as a "normative comparison". The  
12 use of self-handicaps and of the performance has been realized in front of an audience (Ames  
13 & Archer, 1988; see Elliot, Cury, Fryer, & Huguet, 2006). During this session, participants  
14 were told that their results for the experimental task (time at 70% of maximal) would be used  
15 to establish a public ranking. To emphasize the importance of this ranking and thus increase  
16 the likelihood of self-handicapping strategies, we explicitly underlined that this would lead to  
17 the identification of the best and worst students at the university for this task. Then,  
18 participants completed the measures of claimed self-handicapping strategies. In order to hide  
19 the true purpose of the self-handicapping questionnaire, the experimenter told the  
20 participants: "The following questionnaire is intended to determine your actual state right  
21 now in order to interpret your results today. It will allow those who evaluate your competence  
22 (the other students) to consider your current personal situation when authenticating your  
23 results and comparing them with those of the other participants."

24         **Mastery motivational climate (MMC) test condition.** In the MMC condition,  
25 participants were told that their results on the performance task, as well as the claimed

1 reasons for potential failure and success, would not be made public. We particularly insisted  
2 that comparisons would not be made between their scores and those of classmates. They then  
3 completed the measures of claimed self-handicapping strategies. In both sessions, the  
4 participants performed the experimental task after completing the claimed self-handicapping  
5 measures. After the second session, all students were told the true purpose of the study and  
6 about self-handicapping strategies. The procedure was similar to that employed in previous  
7 studies of self-handicapping (see Coudevylle, Martin Ginis, & Famose, 2008a; Coudevylle et  
8 al., 2008b; Coudevylle et al., 2009).

### 9 **Analyses**

10 We conducted McNemar's Chi square tests to explore the effect of the performance  
11 climate condition on the reporting of (a) any impediment, and then (b) impediments that were  
12 reported in both sessions, in the whole sample, and in impediment reporters. We then  
13 performed Student's *t* tests for paired samples to test for differences across conditions in (a)  
14 the number of reasons reported, and in (b) the score of impediment reporting in the whole  
15 sample, in impediment reporters, and in participants who reported impediments in both  
16 sessions. Last, a Student's *t* test was used to analyse the differences between the mean  
17 importance of impediment reported and the performance climate condition in the participants  
18 who reported impediments in both sessions.

19 The second purpose of this study was to provide information about the nature of self-  
20 handicapping claimed in a physical test in hot, wet environment using a qualitative approach.  
21 Categories of impediments were constructed following a methodology presented elsewhere  
22 (Ferrand et al., 2006) and based on the principle of triangulation described by Patton (2002).  
23 We first performed investigator triangulation by analysing the data at three authors; we then  
24 performed theory triangulation by including in the analysis an author outside of the particular  
25 field of the study. The authors, after reading and re-reading the questionnaires, independently

1 identified raw items, which better described the reasons reported by the participants for self-  
2 handicapping. Then, the authors discussed these edited items until they reached full  
3 agreement. Raw items were then combined into low-order themes until agreement was  
4 reached. Then, the low-order themes were combined into high-order themes, and the latter  
5 were grouped into categories. In the analysis process, a researcher who was not a study  
6 author, but who was knowledgeable about qualitative approaches, was included to criticize  
7 and discuss the categorizations. After reaching full agreement from all members, the  
8 categories were validated. McNemar's Chi square tests were conducted to analyse the  
9 qualitative data.

## 10 **Results**

11 The results are presented as follows: quantitative analyses of the use of claimed self-  
12 handicapping, followed by qualitative examination of the nature and type of claimed self-  
13 handicapping in a hot, humid environment.

### 14 **Quantitative Analyses of Claimed Self-handicapping**

15 The first set of analyses aimed at determining whether the use of claimed self-  
16 handicapping strategies varied between the PMC and MMC conditions. Fifty-two participants  
17 (74.3%) reported at least one reason that could have modulated their performance in at least  
18 one session. Four participants reported only reasons for a good performance in the MMC  
19 condition (one for each). Three reported only reasons for a bad performance in the PMC  
20 condition, and only one participant reported only reasons for a good performance in both  
21 conditions. One participant reported one reason for a bad performance in the MMC condition  
22 and one reason for a good performance in the PMC condition. Thirty-six participants (51.4%)  
23 reported at least one reason for bad ongoing performance in the MMC condition, whereas 47  
24 (67.2%) did in the PMC condition (Table 1).

25 The number of participants who reported at least one impediment in the MMC

1 condition and not in the PMC condition was very low (Figure 1). The number of participants  
2 who did not report impediment in the MMC condition and did in the PMC one was more than  
3 five times higher (Figure 1). Also, the number of impediments reported was increased in the  
4 performance climate condition when we took into account the whole group, only impediment  
5 reporters, and only participants who reported in both sessions (Table 2). The maximum  
6 number of impediments reported was three in both sessions.

7         The higher mean perceived impact of impediments observed in the PMC condition  
8 was not significantly different from the impact observed in the MMC session in participants  
9 who reported them in both sessions (Table 2). The maximum perceived impact of  
10 impediments reported was three in both sessions. However, the score of impediment  
11 reporting was found to be associated with the condition, and with participants reporting  
12 higher scores in the performance condition in the whole sample, the impediment reporters,  
13 and the participants who reported in both sessions (Table 2). The maximum self-  
14 handicapping score was six in the MMC and eight in the PMC.

### 15 **Qualitative Analyses of Claimed Self-handicapping**

16         The second set of analyses aimed at providing information on the use of self-  
17 handicapping strategies in a physical test performed in a hot, wet environment. Reasons  
18 reported for poor ongoing performance, frequencies and perceived impacts according to  
19 motivational climate conditions are presented in Table 3. Two categories (internal and  
20 external impediments), three high-order themes (physical state, mental state and  
21 environment), six low-order themes and 14 items were edited, requiring some recodifications.  
22 One example of these recodifications is presented for each item in the same table.

### 23 **Discussion**

1           The purpose of the present study was to quantitatively and qualitatively examine  
2 whether claimed self-handicapping is increased in a performance motivational climate (PMC)  
3 compared with a mastery motivational climate (MMC) in a hot, humid testing situation.

#### 4 **Quantitative Analyses of Claimed Self-handicapping**

5           The first aim of the present study was to test the hypothesis that self-handicapping  
6 strategies are used more in PMC than in MMC in a controlled environment and using non-  
7 influencing open-ended questions. Our results support this hypothesis. Three working  
8 hypotheses were investigated. Two of them were validated while the third was only partially  
9 validated.

10           In accordance with the first working hypothesis, the number of reported impediments  
11 increased in the PMC compared with the MMC condition. This finding is consistent with  
12 previous works (Coudeville et al., 2009; Standage et al., 2007) and supports the idea that  
13 PMC stimulates claimed self-handicapping. It is thought that PMC tends to threaten the self  
14 through social comparisons and risks to out perform others (Ames & Archer, 1988). We tried  
15 to increase the saliency of these characteristics of PMC through the presentation of the  
16 experimental task. It is thus interesting to observe that only 7.5% of the participants who  
17 reported impediments in MMC did not report them in PMC, whereas 40.0% of the  
18 participants who did not report impediments in MMC became self-handicap users in PMC  
19 (see Figure 1).

20           In accordance with the second working hypothesis, the number of impediments per  
21 participant was higher in PMC than MMC. It is interesting to observe that not only did nearly  
22 half of the non-reporters in MMC become reporters in the PMC climate, but also that the  
23 number of reported impediments increased in PMC in the whole sample, in the impediment  
24 reporters, and in the participants who reported in both sessions. The number of reported  
25 impediments consequently seemed to be a way for participants who had already claimed self-

1 handicaps in MMC to better protect themselves in the more self-threatening performance  
2 climate. This finding is important because it suggests that self-handicapping may not be a  
3 binary strategy but more complex, with people self-handicapping proportionally to the  
4 perceived importance of the threat to self. Conversely to the study of Coudevylle and  
5 colleagues and others (e.g., Standage et al., 2007), the present study did not present  
6 participants with a list of possible handicaps, asking them to indicate if any of them would be  
7 likely to impair performance. It is possible that doing so would push participants to indicate  
8 self-handicaps that they might not have suggested on their own, thereby artificially increasing  
9 the number of impediments reported. Such a methodology would be biased, exploring not the  
10 way people spontaneously engage in self-handicapping but the way they engage in self-  
11 handicapping when they are prompted to do so.

12 In comparison with other studies (e.g., Carron et al., 1994; Ryska et al., 1998) using a  
13 similar methodology, we attempted to avoid influencing participants to self-handicap. Indeed,  
14 the participants were asked to indicate any “reasons (and not impediments) that could explain  
15 their ongoing good or bad (and not only bad) performance.” While it is not possible to  
16 demonstrate that this methodological difference alone explains the low number of  
17 impediments reported, it may have contributed.

18 The third working hypothesis was only partially validated. Although the perceived  
19 impact of impediments was higher in the PMC condition, this difference was not significant.  
20 It is reasonable to assume that a bigger sample might have shown significance. It remains  
21 interesting to observe that to improve their self-protection, the participants who were already  
22 engaged in self-handicapping strategies seemed to multiply the number of reported  
23 impediments rather than increase their mean perceived impact, which led to significantly  
24 greater self-handicapping scores. This result is original as Coudevylle and colleagues (2009)  
25 failed to statistically demonstrate an increase in the self-handicapping score in PMC, despite



1 differences observed in their study sample. This could be explained by a statistical power  
2 difference probably due to different sample sizes (31 vs. 52).

### 3 **Qualitative Aspects of Claimed Self-handicapping**

4 We investigated the nature of the self-handicaps reported prior to a physical test in a  
5 hot, wet environment. As this part of the study was exploratory, no hypotheses were  
6 advanced. However, we conducted a statistical analysis to explore the association of  
7 motivational climate with each item, low-order theme, high-order theme and category. The  
8 inductive categorization of reported impediments suggested only one significant result. The  
9 number of internal impediments reported significantly increased in PMC. The number of  
10 external impediment reporters also increased in PMC, but not to a significant extent. Thus, it  
11 is difficult to draw conclusions on a hypothetical qualitative shift in self-handicapping  
12 strategies across motivational climates. However, it is interesting to observe that reported  
13 impediments have tended to vary between studies. The first low-order theme was the  
14 impediments related to fatigue. This impediment was the most reported in the present study,  
15 whereas it was not mentioned by Prapavessis et al. (2004) nor reported by Ferrand et al.  
16 (2006). In the present experimental context, the participants claimed “*heat*” and “*stiffness*”  
17 as possible external reasons that could impair their performance. These impediments related  
18 to tropical climate were less numerous than those related to internal obstacles. This could be  
19 explained by the fact that the participants lived in a tropical environment all year long,  
20 making tropical conditions less salient potential impediments than for people living in a  
21 neutral climate. These impediments are different from what has been previously found in the  
22 self-handicap literature. This inconsistency seems to indicate that there is no impediment that  
23 is always cited but that participants choose the first obstacles that come to mind. This would  
24 explain why the impediments related to the tropical climate were not reported more often: the  
25 participants opted for internal impediments, hardly verifiable whatever the context.

## Conclusion

The present study aimed at testing the hypothesis that the use of claimed self-handicaps differs across experimentally manipulated motivational climates, in a controlled environment and using non-influencing open-ended questions. Overall, the present research demonstrated that in the physical activity context, (a) participants who engage in a self-handicapping strategy were more numerous, (b) the number of self-handicaps reported so as the self-handicap score was greater, and (c) the participants who engaged in a self-handicapping strategy in both sessions reported more impediments in the PMC condition than in the MMC condition. It seems that the increased engagement in a self-handicapping strategy in PMC was mediated by an increase of the number of reported impediments rather than an increase in the perceived impact of these last. The quantitative differences observed in the present study relative to previous studies might be due to differences in the methodological approach, which suggests the interest of designing a study on the impact of methodological choices on self-handicapping involvement. The main limitation of the present study is the relatively moderate sample size, which may explain the non-significant effect of motivational climate on the perceived impact of impediments. Another limitation is that we did not assess perceptions of the motivational climate, although Midgley and Urdan (2001) showed that these perceptions influence self-handicapping. It is reasonable to assume that a preliminary screening of only participants who perceived PMC as a PMC and MMC as an MMC would have modulated the results, increasing the association of claimed self-handicapping with the motivational climate.

In future research, it may be helpful to conduct a mixed physiological/psychological study. Some studies suggest that a hot environment modulates several psychological factors, such as mood (McMorris et al., 2006) and complex (Gaoua et al., 2012) and simple (Cian et al., 2001) cognitive performance. This suggests the hypothesis of a psychological component

1 of thermal discomfort in tropical climate. In the field of physiological research on the impact  
2 of the tropical climate on performance, it might therefore be relevant to consider that the self-  
3 reported weight of climate, as an impediment, may be modulated by a tendency toward self-  
4 handicapping strategy when the self is threatened, as may occur in competition or  
5 experimental work. Indeed, aerobic exercise performance is decreased in a tropical  
6 environment (Galloway & Maughan, 1997; Hue, 2011; Morris et al., 1998) but it is possible  
7 that this claim is overstated by some athletes for self-protection or self-enhancement.

8         From an applied perspective, it is important to develop an MMC to promote personal  
9 progress (e.g., Gernigon, d'Arripe-Longueville, Debove, & Puvis, 2003). Teachers who are  
10 aware of the scientific literature favor an MMC to encourage progress. However, students  
11 have their own goals. Despite the MMC set by the teacher, students with performance goals  
12 may very well remain focused on their performance goals. Urdan (2004) examined how  
13 students perceive and interpret achievement goal messages in the classroom. Knowledge of  
14 the strong relationship between PMC and self-handicapping might give teachers another  
15 reason to control the climate they propose to their class. Assessing self-handicapping rather  
16 than the motivational climate would avoid the social desirability effect by which students  
17 declare that they are seeking a mastery goal when in fact they are seeking a performance  
18 goal. Thus, a student's declaration of obstacles while supposedly in an MMC setting could be  
19 an indicator that he or she actually perceives a PMC anyway.

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