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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 (Coudevylle, 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 (Coudevylle et al., 2009; Standage et al., 2007).
17 Within a skill test, Coudevylle 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.

20

References

- 1
2 Ames, C. A. (1984). Achievement attributions and self-instructions in competitive and
3 individualistic goal structures. *Journal of Educational Psychology*, 76(3), 478–487.
4 doi: 10.1037/0022-0663.76.3.478
- 5 Ames, C. A. (1992). Achievement goals, motivational climate, and motivational processes. In
6 G. C. Roberts (Eds.), *Motivation in sport and exercise* (pp. 161–176). Champaign, IL:
7 Human Kinetics.
- 8 Ames, C. A., & Archer, J. (1988). Achievement goals in the classroom: Students' learning
9 strategies and motivation processes. *Journal of Educational Psychology*, 80(3), 260–
10 267. doi: 10.1037/0022-0663.80.3.260
- 11 Berglas, S., & Jones, E. E. (1978). Drug choice as a self-handicap strategy in response to non
12 contingent success. *Journal of Personality and Social Psychology*, 36(4), 405–417.
13 doi: 10.1037/0022-3514.36.4.405
- 14 Carron, A. V., Prapavessis, H., & Grove, J. R. (1994). Group effects and self-handicapping.
15 *Journal of Sport and Exercise Psychology*, 16, 246–257.
- 16 Cian, C., Barraud, P. A., Melin, B., & Raphel, C. (2001). Effects of fluid ingestion on
17 cognitive function after heat stress or exercise-induced dehydration. *International*
18 *Journal of Psychophysiology*, 42(3), 243–251. doi: 10.1016/S0167-8760(01)00142-8
- 19 Coudeville, G. R., Gernigon, C., & Martin Ginis, K. A. (2011). Self-esteem, self-confidence,
20 anxiety and claimed self-handicapping: A mediational analysis. *Psychology of Sport*
21 *and Exercise*, 12(6), 670–675. doi: 10.1016/j.psychsport.2011.05.008
- 22 Coudeville, G. R., Gernigon, C., Martin Ginis, K. A., & Famose, J.-P. Les Stratégies d'auto-
23 handicap : Fondements théoriques, déterminants et caractéristiques [Self-
24 handicapping strategies: theoretical foundations, determinants, and characteristics].
25 *Psychologie française*, article in press. doi: 10.1016/j.psfr.2014.04.002

- 1 Coudevylle, G. R., Martin Ginis, K. A., & Famose, J.-P. (2008a). Determinants of self-
2 handicapping strategies in sport and their effects on athletic performance. *Social*
3 *Behavior and Personality*, 36(3), 391–398. doi: 10.2224/sbp.2008.36.3.391
- 4 Coudevylle, G. R., Martin Ginis, K. A., Famose, J.-P., & Gernigon, C. (2008b). Effects of
5 self-handicapping strategies on anxiety prior to athletic performance. *The Sport*
6 *Psychologist*, 22, 304–315.
- 7 Coudevylle, G. R., Martin Ginis, K., Famose, J.-P., & Gernigon, C. (2009). An experimental
8 investigation of determinants and consequences of self-handicapping strategies across
9 motivational climates. *European Journal of Sport Science*, 9(4), 219–227. doi:
10 10.1080/17461390902780437
- 11 Dweck, C. S. (1986). Motivational processes affecting learning. *American Psychologist*,
12 41(10), 1040–1048. doi: 10.1037/0003-066X.41.10.1040
- 13 Elliot, A. J., Cury, F., Fryer, J. W., & Huguet, P. (2006). Achievement goals, self-
14 handicapping, and performance attainment: A mediational analysis. *Journal of Sport*
15 *& Exercise Psychology*, 28, 344–361.
- 16 Ferrand, C., Tetard, S., & Fontayne, P. (2006). Self-handicapping in rock climbing: A
17 qualitative approach. *Journal of Applied Sport Psychology*, 18, 271–280.
- 18 Finez, L., & Sherman, D. K. (2012). Train in vain: the role of the self in claimed self-
19 handicapping strategies. *Journal of Sport & Exercise Psychology*, 34, 600–620.
- 20 Galloway, S. D., & Maughan, R. J. (1997). Effects of ambient temperature on the capacity to
21 perform prolonged cycle exercise in man. *Medecine Science in Sports and Exercise*,
22 29, 1240–1249.
- 23 Gaoua, N., Grantham, J., Racinais, S., & Massoui, F. (2012) Sensory displeasure reduces
24 complex cognitive performance in the heat. *Journal of Environmental Psychology*, 32,
25 158–163.

- 1 Gernigon, C., d'Arripe-Longueville, F., Debove, V., & Puvis, A. (2003). Situational indexes
2 of achievement motivation, help-seeking, and performance: Influences of the learning
3 context and gender differences. *Research Quarterly for Exercise and Sport*, 74, 473-
4 479. doi: 10.1080/02701367.2003.10609117
- 5 Hausenblas, H. A., & Carron, A. V. (1996). Group cohesion and self-handicapping in female
6 and male athletes. *Journal of Sport and Exercise Psychology*, 18, 132–143.
- 7 Hirt, E. R., Deppe, R. K., & Gordon, L. J. (1991). Self-reported versus behavioral self-
8 handicapping: Empirical evidence for a theoretical distinction. *Journal of Personality
9 and Social Psychology*, 61, 981–991. doi: 10.1037/0022-3514.61.6.981
- 10 Hue, O. (2011). The challenge of performing aerobic exercise in tropical environments :
11 Applied knowledge and perspectives. *International Journal of Sports Physiology and
12 Performance*, 6, 443–454.
- 13 Kuczka, K. K., & Treasure, D. C. (2005). Self-handicapping in competitive sport: Influence
14 of the motivational climate, self-efficacy, and perceived importance. *Psychology of
15 Sport and Exercise*, 6, 539–550. doi: 10.1016/j.psychsport.2004.03.007
- 16 Leary, M. R., & Shepperd, J. A. (1986). Behavioral self-handicapping vs. self-reported
17 handicaps: A conceptual note. *Journal of Personality and Social Psychology*, 51(6),
18 1265–1268. doi: 10.1037/0022-3514.51.6.1265
- 19 Lung, H. C., Chia-Huei, W., Ying, H. K., Meng-Shyan, L., & Shang-Hsueh, S. (2009). Fear
20 of failure, 2 × 2 achievement goal and self-handicapping: An examination of the
21 hierarchical model of achievement motivation in physical education. *Contemporary
22 Educational Psychology*, 34, 298–305.
- 23 Martin, K. A., & Brawley, L. R. (2002). Self-handicapping in physical achievement settings:
24 The contributions of self-esteem and self-efficacy. *Self and Identity*, 1(4), 337–351.
25 doi: 10.1080/15298860290106814

- 1 McMorris, T., Swain, J., Smith, M., Corbett, J., Delves, S., Sale, C., Harris, R. C., & Potter, J.
2 (2006). Heat stress, plasma concentrations of adrenaline, noradrenaline, 5-
3 hydroxytryptamine and cortisol, mood state and cognitive performance. *International*
4 *Journal of Psychophysiology*, *61*, 204–215.
- 5 Midgley, C., & Urdan, T. (2001). Academic self-handicapping and achievement goals: A
6 further examination. *Contemporary Educational Psychology*, *26*, 61–75.
- 7 Morris, J. G., Nevill, M. E., Lakomy, H. K. A., Nicholas, C., & Williams, C. (1998). Effect of
8 a hot environment on performance of prolonged, intermittent, high-intensity shuttle
9 running. *Journal of Sports Sciences*, *16*, 677–686.
- 10 Nicholls, J. (1989). *The competitive ethos and democratic education*. Cambridge, MA:
11 Harvard University Press.
- 12 Ntoumanis, N., Thøgersen-Ntoumanis, C., & Smith, A. (2009). Achievement goals, self-
13 handicapping, and performance: A 2 x 2 achievement goal perspective. *Journal of*
14 *Sports Sciences*, *27*(13), 1471–1482. doi: 10.1080/02640410903150459
- 15 Ommundsen, Y. (2001). Self-handicapping strategies in physical education classes: The
16 influence of implicit theories of the nature of ability and achievement goal
17 orientations. *Psychology of Sport and Exercise*, *2*(3), 139–156. doi: 10.1016/S1469-
18 0292(00)00019-4
- 19 Ommundsen, Y. (2004). Self-handicapping related to task and performance-approach and
20 avoidance goals in physical education. *Journal of Applied Sport Psychology*, *16*(2),
21 183–197. doi: 10.1080/10413200490437660
- 22 Patton, M. Q. (2002). *Qualitative Research and Evaluation Methods*. Thousand Oaks, CA:
23 Sage Publications.
- 24 Prapavessis, H., Grove, J. R., & Eklund, R. C. (2004). Self-presentational issues in
25 competition and sport. *Journal of Applied Sport Psychology*, *16*, 19–40.

- 1 Racinais, S., Blanc, S., Jonville, S., & Hue, O. (2005). Time of day influences the
2 environmental effect on force and contractility. *Medecine & Science in Sports &*
3 *Exercise, 37*, 256–261.
- 4 Racinais, S., Chamari, K., Hachana, Y., Bartagi, Z., Blanc, S., & Hue, O. (2006). Effect of an
5 accute hot and dry exposure in moderately warm and humid environment on muscular
6 performance at different time of day. *International Journal of Sports Medecine,*
7 *27*, 49–54.
- 8 Ryska, T. A., Yin, Z. N., & Cooley, D. (1998). Effects of trait and situational self-
9 handicapping on competitive anxiety among athletes. *Current Psychology, 17*, 48–56.
- 10 Salati, E., Lovejoy, T. E., Vose, P. B. (1983). Precipitation and water recycling in tropical
11 rain forests with special reference to the amazon basim, *Environmentalist, 3*, 67–72.
- 12 Snyder, C. R., & Smith, T. W. (1982). Symptoms as self-handicapping strategies: The virtues
13 of old wine in a new bottle. In G. Weary (Eds.), *Integrations of Clinical and Social*
14 *Psychology* (pp. 104–127). New York: Oxford University Press.
- 15 Standage, M., Treasure, D. C., Hooper, K., & Kuczka, K. (2007). Self-handicapping in school
16 physical education: The influence of the motivational climate. *British Journal of*
17 *Educational Psychology, 77*(1), 81–99. doi: 10.1348/000709906X103636
- 18 Tice, D. M. (1991). Esteem protection or enhancement? Self-handicapping motives and
19 attributions differ by trait self-esteem. *Journal of Personality and Social Psychology,*
20 *60*(5), 711–725. doi: 10.1037/0022-3514.60.5.711
- 21 Urdan, T. (2004). Using multiple methods to assess students' perceptions of classroom goal
22 structures. *European Psychologist, 9*, 222–231. [http://dx.doi.org/10.1027/1016-](http://dx.doi.org/10.1027/1016-9040.9.4.222)
23 [9040.9.4.222](http://dx.doi.org/10.1027/1016-9040.9.4.222)
- 24 Urdan, T., & Midgley, C. (2001). Academic self-handicapping: What we know, what more
25 there is to learn. *Educational Psychology Review, 13*(2), 115–138.