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## EVALUATION STRATEGIES, SELF ESTEEM, AND ATHLETIC PERFORMANCE

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### ABSTRACT

*The relationships between self esteem, self evaluative information use, and athletic performance were examined among 103 intercollegiate athletes. As predicted, personal standards were rated as the most useful form of information with downward social comparisons and feared selves information as the least useful. Athletes high in self esteem used more personal standards and ideal selves information and fewer feared selves. Higher self esteem was associated with better athletic performance. Controlling for self esteem, hours practiced, and social desirability, better athletic performance was associated with using upward, lateral, and downward social comparisons. Athletes using negative performance information from the past performed more poorly.*

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A great deal of research has examined self evaluation strategies and their importance to self regulatory tasks (Higgins, Strauman, & Klein, 1986 for review). Although dozens of studies have examined self evaluation processes in the context of achievement domains, only a few have been conducted in the athletic domain (see Horn & Amorose, 1998 for review). Self evaluation processes have been implicated as central to the formation of competence beliefs, known to affect athletic performance (Weiss & Ebbeck, 1996). Because self evaluation processes are ubiquitous in the athletic domain, appear to play a central role in athletes' competency assessments, the present study examines athletes' preferences for self evaluative information, whether these preferences are associated with self esteem, and the kinds of self evaluative activity associated with performance.

### **Self Evaluative Information**

A variety of information types are useful for self evaluation (see Higgins et al., 1986 for review). Taylor and colleagues (Taylor et al., 1995; Wayment & Taylor, 1995) summarized a diverse literature and described ten basic information types that have received attention in the literature. One type of self evaluative information is termed objective information. In his theory of social comparison, Festinger (1954) argued that, when available, people prefer objective information over all other types of information. Another type of self evaluative information is direct verbal evaluation, such as feedback from friends, acquaintances, or experts about a particular subject (Taylor et al., 1995). A third type of evaluative information is an individuals personal standards. For example, by comparing athletes' performances against the standards and goals they have set for themselves, they may be able to better see the areas they need in order to improve (Albert, 1977; Sedikides & Skowronski, 1995). Other types of self evaluative information consist of temporal comparisons, both positive and negative (Albert, 1977), as well as either desired or feared visions of one's performance in the future (Markus & Nurius, 1986). The final types of self evaluative information consist of social comparison information (Festinger, 1954). In an athletic context, social comparison information involves comparing one's performance with someone who is performing better (i.e., an upward comparison), with someone who is performing at about the same level (i.e., a lateral comparison), or with someone who is not performing as well (i.e., a downward comparison; Wills, 1981). One consistent finding to emerge from self evaluation research is that personal standards are the most used information type for evaluation processes, even more than social comparison information (Sedikides & Skowronski, 1995; Taylor et al., 1995; Wayment & Campbell, 2000; Wayment & Taylor, 1995).

### **Self Evaluative Information and Athletic Performance**

Very few studies have specifically examined the kinds of self evaluative information athletes use. Horn and Hasbrook (1987) examined how young athletes form self perceptions of their physical ability. Specifically, they tested Harter's (1981) claim that children who have a strong sense of confidence and belief in their ability in a specific domain will develop an internal set of information that is used for self evaluation. Horn and Hasbrook (1987) found that children that do not have such a belief in their ability developed a dependence on external sources of information. Athletes with a high belief in their athletic ability used personal standards information (such as how they improved over time) to evaluate themselves. The athletes with low belief in their athletic ability used information such as game outcome (e.g., objective information) and parental feedback to evaluate themselves. Locke and Latham (1985) examined the relationship between goal setting and athletic performance and found that setting both long and short term goals were correlated with improved performance. This use of goals is similar to the use of hoped for future selves and personal standards information. The importance of personal standards and social comparison information has also been examined in the context of achievement motivation in sport (Duda, 1993; Gill, 1993).

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## **Self Esteem and Self Evaluation**

Several studies have shown that people who participate in athletics have higher levels of self esteem than those who do not (Mahoney, 1989; Taylor, 1995). Research examining self esteem and self evaluative strategies among college students in academic and interpersonal domains has found that individuals high in self esteem tend to use objective and personal standards information to evaluate themselves, while people low in self esteem rely more on social comparison information (Taylor et al., 1995; Wayment & Taylor, 1995; Wayment, 1992). Scanlan and Passer (1981) conducted a study that examined the pre and post game expectancies of young male soccer players. The post game expectancies were significantly affected by level of self esteem, especially if the player's team had lost the game. Losing players with high self esteem had very positive outlooks (e.g., hoped for future selves information) concerning a rematch with the team that had just beaten them. However, losing players with low self esteem expected to be beaten by the same team if a rematch occurred (e.g., feared selves information).

The goal of the present study was to assess athletes' perceptions of the usefulness of ten types of evaluative information for evaluating their athletic performance, to examine if these self evaluative strategies were associated with self esteem, and to examine the impact of these strategies on athletic performance. Since previous research on athletic performance levels in relation to practice behavior suggests that it is important to control for the amount of practice

(Helsen, Starkes, & Hodges, 1998), we also examined whether the total number of hours athletes practiced per week was positively related to athletic performance.

In line with previous research, we hypothesized that athletes would say they used personal standards information most often. Athletes high in self esteem were predicted to be more likely to use hoped for future selves, personal standards information, and upward social comparisons to evaluate themselves than those low in self esteem, while athletes low in self esteem would be more likely to use feared selves information for self evaluation. Given the relative lack of empirical evidence regarding the specific types of self evaluative information use that might predict enhanced athletic performance, we ventured only a few predictions. We predicted that self esteem would be positively associated with athletic performance, as would total hours practiced per week. We also hypothesized that given the central role personal standards, hoped for future selves information, and upward social comparisons have for self improvement (cf. Taylor et al., 1995; Taylor & Lobel, 1993), personal standards, upward social comparisons, and hoped for future selves would be associated with better athletic performance.

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## **METHOD**

### **Participants**

One hundred and three intercollegiate male and female athletes who participated on the varsity cross country (n = 24), track and field (n = 35), volleyball (n = 14), swimming (n = 23), and diving (n = 7) teams at a mid sized southwestern university volunteered to participate in the present study. Sixty five of the participants were female (63%) and 38 were male (37%). The mean age of these athletes was 18.7 years (range: 17 to 23). Thirty one participants were freshmen in college (31%), 32 were sophomores (32%), 20 were juniors (20%), and 18 were seniors (18%) (2 did not provide information). Most of the sample was Caucasian (n = 87, 85%), followed by those who identified themselves as African American (n = 6, 6%), Hispanic (n = 2; 2%), Native American (n = 4, 4%), and Other (n = 2, 2%).

### **Design and Procedure**

Coaches of seven college varsity athletic teams were contacted and asked for permission to recruit their players as possible participants. All coaches agreed and their athletes were told that the purpose of the study was to determine how athletes evaluate their performance and would require them to complete a questionnaire packet. Individual team members were then allowed to decide if they wished to participate in the study. All of the recruited athletes agreed to participate in the present study.

## Measures

### *Background Information*

This questionnaire assessed general demographic information: age, gender, and ethnic group identification.

### *Total Hours Practiced*

Participants were asked to report the amount of time they practiced their sport per week, both with their team and on their own. These two numbers were combined for a total hours practiced score. Responses on this variable ranged from 12 to 25 hours a week.

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### *Self Evaluative Information Use*

Study participants gave their best estimates of the kinds of information they typically used to evaluate their athletic performance using the 30 item self evaluation scale (Wayment, 1992). For the present study the items were worded in order to be relevant for the evaluation of one's athletic performance. This scale has been modified to measure information use in other domains (e.g., academic performance, romantic relationships) and has been shown to have good reliability and construct validity (see Wayment & Campbell, 2000). Students read each item (e.g., "I compare my performance with those that perform better than I do.") and then indicated the extent

to which they agreed using a 7 point scale (1= not at all true for me; 7 = very true for me). Each of the 10 information types were assessed with 3 items. Coefficient alphas for the remaining information scales were as follows: objective (.60), feedback (.84), personal standards (.68), positive temporal comparisons (.80), negative temporal comparisons (.65), hoped for future selves (.60), feared selves (.80), upward comparisons (.70), lateral social comparisons (.78), and downward social comparisons (.62). (Questionnaire items in appendix)

### *Self Esteem*

The Rosenberg Self Esteem Scale (1965) was used to measure self esteem. The original 4 point scale was modified to be a 5 point scale (5=agree very much; 1=disagree very much). Coefficient alpha for this scale was .84. A median split was conducted to create groups of higher and lower self esteem.

### *Athletic Performance*

To measure athletic performance, each study participant's performance was rated by the athletes, their teammates, and their coach with two items [talent level (1 = Way below talent level, 10 =Way above talent level); relative performance" (1 = Much worse than the rest of the team, 10 = Much better than the rest of the team)]. Ratings given by an athlete's teammates were averaged to form one score. The six performance ratings correlated very highly with a coefficient alpha of .83.

### *Social Desirability*

The degree to which subjects tended to present a socially desirable picture of themselves was assessed with a 20 item version of the Marlowe Crowne Social Desirability Scale (MC SDS, Crowne & Marlowe, 1960; Strahan & Gerbasi, 1972). The Kuder Richardson reliability coefficient for this scale was .67.

## RESULTS

### Initial Analyses

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Prior to examining the sample as a whole, a two way MANOVA (gender, type of sport) for all of the variables (hours practiced per week, self esteem, use of 10 types of self evaluative information, and athletic performance) was conducted. There were no significant main effects or interaction, thus, the data were collapsed across gender and team type for further analyses. All variables were also examined for departures from normality and found to be normal.

**Table 1 Means, Standard Deviations, Skewness, and Kurtosis for All Variables**

	Mean	SD	Skewness	Kurtosis
Hours Practiced (a)	20.33	5.90	1.21	1.13
Information Types (b):				
Objective Information	5.02	1.37	.36	.08
Feedback Information	5.34	1.16	.68	.17
Personal Standards	5.81	.93	.63	.21
Negative Temporal	3.99	1.73	.04	1.06
Positive Temporal	5.34	1.15	.71	.35
Feared Selves Information	2.89	1.44	.60	.46
Hoped For Future Selves	4.33	1.57	.37	.42
Upwards Social Comparisons	5.41	1.09	.76	.47
Lateral Social Comparisons	4.62	1.34	.30	.48
Downward Social Comparisons	3.28	1.46	.37	.72
Self Esteem (c)	4.03	.58	.37	.38
Athletic Performance(d)	6.34	1.12	.14	.07

Note: (a) range: 12 to 25; (b) range:1 to 7; (c) range: 1 to 5; (d) range: 1 to 10.

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### Use of Self Evaluative Information

To determine which types of self evaluative information were preferred by athletes, a one way repeated measures MANOVA was conducted with the ten information types as the repeated measure, self esteem (low, high) as the independent variable, and usefulness rating as the dependent variable. The main effect for information type was significant ( $F(9, 92) = 49.23, p < .0001$ ). As predicted, personal standards were the preferred form of information, with a mean of 5.82 on a 7 point scale. Post hoc contrasts indicated that personal standards were reported as used more often than any other type of information ( $ps$  ranged from .0012 to .0001). As indicated in Table 1, the other information types that were found to be useful (e.g., having a mean greater than 3.5) were (in order of usefulness): upward social comparison information, positive temporal comparisons, feedback information, objective information, lateral social comparisons, hoped for future selves information, and negative temporal comparisons. Downward social comparisons and feared selves information were reported as not being very useful for evaluating one's athletic performance (e.g., means lower than 3.5), also supporting the predictions.

The information type by self esteem interaction was also significant ( $F(9,92) = 4.72, p < .0001$ ) indicating that the relative preference for information types varied by levels of self esteem. Inspection of the between subjects means revealed that three of the six predictions regarding self esteem were supported. Individuals high in self esteem reported using more personal standards ( $F(1,100) = 5.59, p < .02$ ) and hoped for future selves information ( $F(1,100) = 10.36, p < .0001$ ) than those low in self esteem. Individuals low in self esteem were more likely to use feared selves information ( $F(1,100) = 10.83, p < .001$ ) than those high in self esteem. Contrary to prediction, there were no differences on the reported use of upward social comparisons. Means are reported in Table 2.

**Table 2 Usefulness Ratings of 10 Information Types by Self Esteem**

	Low Self esteem (n = 52)	High Self Esteem (n = 50)	F(1, 102)
Objective Information	4.46 (1.0)	4.79 (1.1)	2.53
Feedback Information	5.35 (1.1)	5.34 (1.2)	.00
Personal Standards	5.61 (.91)	6.02 (.91)	5.39*
Negative Temporal	4.31 (1.2)	4.53 (1.3)	.71
Positive Temporal	5.16 (1.2)	5.52 (1.1)	2.52
Feared Selves	3.33 (1.5)	2.43 (1.3)	10.83***
Hoped For Future Selves	5.78 (.92)	6.30 (.68)	10.36***
Upward Comparisons	5.28 (1.1)	5.55 (1.1)	1.60
Lateral Comparisons	4.56 (1.1)	4.70 (1.6)	.30
Downward Comparisons	3.16 (1.4)	3.41 (1.5)	.77



Note: scale ranges from 1 to 7

\*  $p < .05$ , \*\*\*  $p < .001$

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In order to examine the predictions regarding the relationships between hours practiced, self esteem, self evaluative information use (10 types), and athletic performance, a regression analysis was computed where performance (e.g., self, team, and coach ratings of talent and relative performance) was regressed onto self esteem, social desirability, hours practiced per week, and the reported use of 10 types of self evaluative information. Correlations are presented in Appendix B.

As predicted, better performance was associated with greater self esteem ( $\beta = .46$ ,  $t(1) = 2.08$ ,  $p < .05$ ). The number of hours practiced per week was also marginally associated with better performance ( $\beta = .16$ ,  $t(1) = 1.56$ ,  $p < .08$ ). We had predicted that, controlling for self esteem, time practiced, and social desirability, personal standards, upward social comparisons, and hoped for future selves would be associated with better athletic performance. There was no support for personal standards or hoped for selves, but some support for upward social comparison information ( $\beta = .20$ ,  $t(1) = 1.54$ ,  $p < .08$ , one-tailed). Although not predicted, better performing athletes also reported more downward comparison information ( $\beta = .41$ ,  $t(1) = 2.70$ ,  $p < .01$ ). Other trends in the data suggested that better athletic performance was associated with using more lateral social comparison information ( $\beta = .27$ ,  $t(1) = 1.77$ ,  $p < .05$ , one-tailed) and less past negative information ( $\beta = .26$ ,  $t(1) = 1.86$ ,  $p < .05$ , one-tailed). The overall model was significant ( $F(13,88) = 2.17$ ,  $p < .01$ ;  $r^2 = .24$ , adjusted  $r^2 = .13$ ). (see Appendix C)

## DISCUSSION

The present study examined whether previous findings on preferences for self evaluative information, relationship between self esteem and self evaluative information use, were similar among college varsity athletes, and whether specific self evaluation strategies were associated with better athletic performance.

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### What Kinds of Self Evaluative Information Do Athletes Prefer?

Based on previous literature, it was predicted that athletes would prefer personal standards over all of the other information types. Results from the present study supports a great deal of research on self evaluative strategies of college students in other domains, such as academic, social lives, and romantic relationships (Taylor et al., 1995; Wayment & Campbell, 2000). Why are personal standards used so often? Previous researchers (Taylor et al., 1995; Wayment & Taylor, 1995) have suggested that the use of personal standards information allows one to access only that portion of one's beliefs that is relevant to a particular self evaluative motive. For example, when self enhancement needs are paramount, one may access information about one's self that makes one feel good; when improvement needs are paramount, one may focus selectively on goals and plans for the future and expectations for meeting them. Because they are private, personal standards may also be very flexible. An individual can assess his or her performance in the privacy of his or her own mind, bending, shaping, and tweaking these standards to meet a current need. For example, if a standard is too high and an individual would like to see improvement, they may slightly adjust their standard downward to demonstrate improvement. This finessing of personal standards may explain why individuals high self esteem are able to maintain their self esteem even in the face of difficulty (Scanlan & Passer, 1981). As noted earlier, athletes with higher self esteem reported personal standards more useful than those with lower self esteem. Future research investigating the flexibility of standards, especially in the context of individual differences like self esteem, are needed.

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The reported use of social comparison information types was mixed. Upward social comparisons were reportedly used very frequently, and given the importance of this information to self improvement, is not surprising (Taylor & Lobel, 1993). Interestingly, athletes reported much lower use of lateral and downward social comparison information, yet both of these types of information were related to better performance. Previous work on self evaluation has also found that individuals report that they do not rely on explicit comparisons with worse performing others (Taylor et al., 1995; Wayment & Campbell, 2000). The lower reported use of these two types of social comparison information was not due to social desirability biases. Festinger's (1954) original hypothesis was that social comparisons would only be sought out to the extent that objective information is not available or useful. Although there are certainly instances when the presence of objective information does not completely eliminate the need for social comparison information (Klein, 1997), it may be that the low reported use of social comparison information in the present study is due to the fact that objective sources of information are so plentiful and useful in the athletic domain. Inspection of Table 3 shows that the more objective information is used, the less upward (.25) and lateral social comparison (.33) information reportedly used by athletes in this study. Suls (1986) questioned the utility of social comparison information and argued that the existence of personal sources of information may reduce the need to make social comparisons in certain situations. Inspection of the correlations (see Table 3) among personal sources of information and social comparison information are both positive and negative, suggesting that further research might examine more closely how the usefulness

and availability of personal sources of information might reduce the need for lateral and downward social comparisons.

## **Impact of Self Esteem**

As predicted, individuals higher in self esteem performed better athletically than athletes lower in self esteem. This result is consistent with past research which has also found self esteem to be associated with better athletic performance (Mahoney, 1989). The mechanisms responsible for this relationship may be that lower evaluation apprehension and greater confidence in self presentation facilitates athletic performance (Geisler & Leith, 1997). In terms of self evaluation activity, athletes higher in self esteem were more likely to rely on their own personal standards for performance, hoped for possible selves and less likely to rely on feared selves information. These results reinforce the idea that high self esteem athletes may be better at positive forms of mental visualization and that this ability is an important aspect of athletic performance (Murphy, 1994).

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## **Self Evaluations and Athletic Performance**

It was predicted that a greater use of personal standards, hoped for future selves and upward social comparisons would be associated with better athletic performance because these information types are associated with self improvement (Wayment & Taylor, 1995; Taylor & Lobel, 1993). Controlling for self esteem, hours practiced, and social desirability responding bias, better performing athletes reported using more upward, lateral, and downward social comparisons. Thus, social comparison information figured prominently in elevated athletic performance. Because upward social comparisons (e.g., better performing others) are so useful for self improvement, they may be more salient for competitive athletes and therefore easier to recall. It is interesting that although athletes reported that they did not use lateral and downward comparisons very often, these two types of information were associated with better performance. Although the reported use of these information types were not associated with a social desirability response bias, it may be that individuals may be generally unaware of the extent to which they utilize such social comparisons. Festinger (1954) argued that comparison information may provide "normative" and "comparative" information that is incorporated and eventually becomes self referent. Future research needs to examine the processes by which social comparison information becomes personalized and incorporated into self evaluative efforts. Finally, we also found that athletes who used more negative information from the past to

evaluate themselves performed more poorly. That is, dwelling on past mistakes has an adverse impact on performance. Frost and Henderson (1991) found that a perfectionism subscale, "Concern Over Mistakes," was associated with anxiety related to competition, low self confidence, a failure orientation, and negative reactions in regard to mistakes in competition. Our findings lend support to the idea that self evaluation strategies may help or hinder athletic performance. Understanding how athletes utilize the evaluative information that is available to them may aid those who are interested in athletic performance.

## **Limitations**

A number of limitations of the present study should be noted. The first limitation is that this is a cross sectional study and we cannot make any assumptions about the direction of causality between self evaluation strategies and athletic performance. It may be that athletic performance influences the kind of information selected for self evaluation, or that reliance on some types of self evaluative information leads to better performance. Longitudinal studies are required to shed light on the direction of causal relationships. A second important limitation concerns the fact that entire teams were sampled, with some teammates having the same coach. This non independence of data may have inflated some of the relationships between performance due to artificially low variance. However, athletes did complete the questionnaires independently and did not appear to be overtly influenced by one another in their performance ratings. While we cannot be absolutely sure to what extent this problem may have impacted the data, the fact that coach, peer, and athlete's ratings were correlated may also reflect the fact that they were measuring the same thing and not only due to non independence of data. Inspection of the correlations among the six performance ratings were moderate. For example, the correlations between coaches', teammates' and athletes' ratings ranged between .13 to .84, with an average of .45. The highest correlations were the inter correlations between the two performance items (coaches: .46, teammates: .84, self: .74). When these correlations are not considered, the average correlation drops to .39. These moderate relationships, combined with a high coefficient alpha, can be taken as evidence of both independence and reliability. A third limitation concerns the assessment of athletic performance. Although the present study assessed the athlete's, teammates, and coach's ratings of performance, other objective indices of athletic success would be a stronger test of the impact of self evaluative strategies on athletic performance. A fourth limitation concerns the nature of the sports in which the athletes participated. Past research has indicated that athletes of team and individual sports differ on a number of personality characteristics (Vallerand, Deshaies, & Cuerrier, 1997). Although nearly all of the athletes were from individual sports, future investigations might benefit from focusing on athletes from a specific sport. A fifth limitation concerns the method used to assess self evaluative information use. While self report methodologies are common in self evaluation research, future research might examine self evaluative processes utilizing a diary methodology. For example, some of the kinds of information that our respondents said that they did not think were that important (e.g., lateral or downward social comparison information) were actually significantly associated

with athletic performance. It may be that, in retrospect, athletes are not that aware of the extent to which they use information.

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## Conclusion

Athletes, like other individuals, are often unaware of the kinds of self evaluative information they use or the impact of such strategies on affect, cognition, and behavior. Understanding these issues may help athletes and the individuals that work with them enhance their performance and understand how they utilize the great amount of information available to them in the athletic domain. Applying the study of self evaluation processes to the athletic domain and examining the utilization of self evaluative information in the context of a specific outcome (e.g., performance) also adds support for the real world applicability of self evaluation research.

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## APPENDIX A. ATHLETIC SELF EVALUATION QUESTIONNAIRE

The following statements describe various ways in which people evaluate their athletic selves. For each of the statements below, indicate the extent to which you generally do each of the following things to evaluate your athletic self using the following scale 1= Not at all true for me, 7= Very true for me.

In order to evaluate my athletic self, I .....

### Objective Information

1. Think about objective indicators of my athletic ability (e.g., speed, agility, vertical leap).
12. Evaluate my athletic self by examining statistics that characterize my performance.
23. Think about objective information concerning my athletic performance.

### Feedback

1. Think about what coaches have told me about my athletic performance.
16. Think about what my teammates have told me about my athletic performance.
- 24/ Remember what others have told me about my athletic strengths and weaknesses.

#### Personal Standards

2. Think about the athletic standards I have set for myself.
14. Reflect on my own standards about how I should be doing in my sport.
25. Compare my athletic self with my own personal standards about how I should be doing in my sport.

#### Positive Information from the Past

3. Reflect on my past athletic accomplishments.
17. Compare my current athletic performance with examples of when I performed well in the past.
26. Think about times in the past when I did well in my sport.

#### Negative Information from the Past

4. Compare my current athletic performance with examples of how I didn't perform well in the past.
18. Think about times in the past when I was not doing well in my sport.
27. Reflect on my past athletic mistakes.

#### Hoped For Future Selves

5. Think about how I would like to be performing athletically in the future.
19. Envision myself performing at my very best.
28. Compare my current athletic performance with an image of the kind of performance that I would really like to give.

#### Feared Selves

6. Compare my current athletic performance with an image of me performing poorly.

20. Think about performing poorly in the future.

29. Envision my "worst fears" about the kind of athletic performance I might give.

#### Upward Social Comparisons

7. Learn from the experiences of people who are doing better athletically than I am.

13. Observe athletes who are performing well in my sport

30. Compare myself with other athletes who seem to be doing very well athletically.

#### Lateral Social Comparisons

8. Observe athletes who are performing about as well as I am.

21. Observe other athletes who are of comparable athletic standing.

31. Learn from the experiences of athletes who are on the same level athletically as I am.

#### Downward Social Comparison

9. Compare myself with athletes who are not doing very well athletically.

22. Learn from the experiences of athletes who are not doing as well in sports as I am.

32. Observe teammates who are not performing athletically as well as I am.

#### Social Comparison—General

10. Observe how other athletes perform athletically.

14. Compare myself with other athletes.

29. Observe the behavior and actions of other athletes.

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## **APPENDIX B. CORRELATION MATRIX**

**Correlations among all of the study variables (N = 102)**

	O	F	PS	PP	PN	HPS	FS	USC	LSC	DSC	SE	HPW	SD	AP
O	1.00													
F	<b>.37</b>	1.00												
PS	<b>.38</b>	<b>.41</b>	1.00											
PP	<b>.44</b>	<b>.54</b>	<b>.48</b>	1.00										
PN	<b>.47</b>	<b>.51</b>	<b>.39</b>	<b>.47</b>	1.00									
HPS	<b>.31</b>	<b>.44</b>	<b>.50</b>	<b>.45</b>	<b>.34</b>	1.00								
FS	<b>.26</b>	<b>.34</b>	.06	<b>.22</b>	<b>.53</b>	.14	1.00							
USC	<b>.25</b>	<b>.53</b>	<b>.29</b>	<b>.36</b>	<b>.33</b>	<b>.44</b>	<b>.25</b>	1.00						
LSC	<b>.33</b>	<b>.45</b>	<b>.35</b>	<b>.34</b>	<b>.43</b>	<b>.35</b>	<b>.30</b>	<b>.59</b>	1.00					
DSC	<b>.28</b>	<b>.46</b>	.14	<b>.37</b>	<b>.52</b>	<b>.22</b>	<b>.49</b>	<b>.47</b>	<b>.68</b>	1.00				
SE	<b>.21</b>	.13	<b>.20</b>	.17	.04	<b>.24</b>	<b>.34</b>	.10	.08	.10	1.00			
HP	.15	.02	.02	.11	.13	.11	.07	.02	.01	.03	.01	1.00		
SD	.10	.05	.01	.01	.07	.10	.11	.05	.09	.06	.18	.12	1.00	
AP	.10	.09	.04	.02	.04	.04	.08	.09	.08	.12	<b>.32</b>	.08	.17	1.00

Notes: O = objective information; F = feedback; PS = personal standards; PP = past positive; PN = past negative; HPS = hoped for possible selves; FS = feared selves; USC = upward social comparisons; LSC = lateral social comparisons; DSC = downward social comparisons; SE = self-esteem; HPW = hours practiced per week; SD = social desirability; AP = athletic performance; Significant coefficients are in **bold**. Coefficients .20 or greater ( $p < .05$ ) .24 or greater ( $p < .01$ ), .31 or greater ( $p < .001$ )

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### APPENDIX C. RESULTS OF REGRESSION ANALYSIS OF INFORMATION TYPES, SELF-ESTEEM, SOCIAL DESIRABILITY, AND HOURS PRACTICED ON ATHLETIC PERFORMANCE.

Predictor Variable	DF	Parameter Estimate (standardized estimate)	SE	T	p value (two-tailed)
Intercept	1	-1.74 (.00)	2.97	-.58	.56
Objective Information	1	.15 (.14)	.13	1.2	.23

Feedback Information	1	-.63 (-.19)	.43	-.48	.15
Personal Standards	1	-.39 (-.11)	.45	-.88	.38
Past Positive	1	.39 (.12)	.42	.96	.34
Past Negative	1	-.23 (-.26)	.13	-1.86	.06
Hoped-for Selves	1	.01 (.01)	.16	.09	.93
Feared Selves	1	-.01 (-.01)	.11	-.11	.92
Upward Social	1	.68 (.20)	.44	1.54	.13
Lateral Social	1	.91 (.27)	.46	1.77	.08
Downward Social	1	.33 (.41)	.12	2.7	.01
Self-Esteem	1	.46 (.24)	.22	2.1	.05
Social Desirability	1	.04 (.13)	.03	1.3	.20
Hours Practiced	1	2.67 (.16)	1.69	1.58	.12

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