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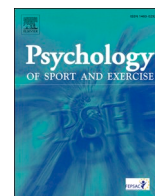
In the context of a sports match, the goal to win is most important, right? Suggestive evidence for a hierarchical achievement goal system

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ABSTRACT

When evaluating one's own or others' performances, there is a strong tendency to rely on social comparison information. Remarkably, however, the extant achievement goal research suggests that the prevalence of other-based goals is very low, also in sport contexts. In the present research, we argue and demonstrate that in the context of a sports match: (1) most athletes' overarching achievement goal is an other-based approach goal (i.e., the goal to win), and (2) athletes with an overarching other-based approach goal also rely on self-based criteria (referring to one's personal performance trajectory) and task-based criteria (referring to the absolute demands of the task). Survey data was collected among 647 competitive korfball players (69.4% women), ranging in age from 16 to 56 years. As expected, for most athletes (51.6%), to win matches was their overarching achievement goal, and pursuing self-based and task-based approach goals added to their competence satisfaction. In such a hierarchical achievement goal system, subordinate goals likely help athletes to increase their awareness of what actions and means facilitate their focal objective: Coming out victorious.

Author note

"When are you satisfied with your performance? When you win gold, or when you achieve a personal best? At the London Olympic Games I managed to secure a gold medal. It wasn't my best race ever, but I was happy with my time of 53.0 seconds. Now I did very well and reached my potential, but I am disappointed not to finish on the podium."

This is a quote from Ranomi Kromowidjojo, Dutch triple Olympic champion (50 m, 100 m, and 4 × 100 m freestyle) and multiple world record holder (Van Yperen, 2021). At the World Aquatics Championships 2017, she explicitly addressed the issue of competence satisfaction when reflecting on the 100 m freestyle race in which she finished fifth with a personal best of 52.7s. Ranomi's mixed feelings about her performance reflect the multifaceted nature of achievement goal pursuit, and accordingly, the complex process of competence satisfaction. In the

present study, we argue and demonstrate that the multiple goals athletes typically hold can be structured into a hierarchical goal system or framework (cf. Williams, 2013). Specifically, in the context of sport matches, most athletes' overarching, or superordinate, achievement goal likely is to be an other-based approach goal (i.e., the goal to win). However, athletes with such an overarching goal rely on self-based criteria and task-based criteria as well. These different types of achievement goals will be discussed next.

1. Achievement goals

In Elliot et al.'s (2011) achievement goal framework, three types of achievement goal standards are distinguished as sources of individuals' competence satisfaction: *other-based, self-based, and task-based.* Individuals' reliance on these standards may vary depending on time and context. Other-based goals are grounded in *inter*personal or normative standards such as winning a match or competition, or a particular position on a ranking. Particularly in sports, but also in society in general, excellence and success are often defined in terms of an individual's achievement relative to others, as exemplified by prizes, titles, bonuses, and honors (e.g., Harackiewicz et al., 1998; Klein, 1997). Hence, when evaluating one's own or others' performances, there is a strong tendency to rely on social comparison information (Van Yperen &

Leander, 2014), a process that might also occur unconsciously in response to subliminal cues (e.g., Mussweiler et al., 2004).

Particularly in the specific context of a sports match, the desire to win is almost automatically enforced (Hardy et al., 1996; Van Yperen, 2021). The problem with other-based goals is, however, that athletes largely lack control over the outcome. Winning or losing is obviously a function of one's own talent and effort, but uncontrollable, external factors have substantial impact as well, including opponents, referees, match conditions, and chance. Hence, from a self-regulation perspective, the goal to win may be best considered a dream or desire. That is, athletes may hope that their own performance will ultimately be good enough for the victory. As illustrated by Ranomi's case, elite athletes may deliver their perfect race but nevertheless lose because their opponents, who are also extremely talented and skilled, perform even better. Hence, it can be argued that the strong motivational force of other-based goals may primarily be utilized when dealing with tough conditions (rain, cold, monotony, loneliness, pain) in training sessions, to provide inspiration before important matches, or to make it possible to give one's all for the win in the final stages of a close race or match (Hardy et al., 1996; Van Yperen, 2021). For their competence satisfaction, and accordingly, the maintenance of sport enjoyment, self-confidence, and long-term development, it may be better for athletes to rely on the building blocks of other-based goals as well: namely, self-based goals and task-based goals (cf. Kruglanski et al., 2002). *Self-based standards* refer to one's personal performance trajectory whereas *task-based standards* refer to the absolute demands of the task (e.g., sinking a putt, lifting one's knees when running; Elliot et al., 2011).

Moreover, achievement goals differ with respect to their *valence*, that is, individuals' desired level of competence (*approach motivation*) or their undesired level of incompetence (*avoidance motivation*; for a review, see Elliot & Hulleman, 2017). Crossing the three standards used to define competence with how competence can be valenced yields a 3×2 achievement goal model (Elliot et al., 2011). Individuals may be focused on (1a) doing better than others or (1 b) not doing worse than others; (2a) doing better than before or (2 b) not doing worse than before; and (3a) doing the task correctly or (3 b) not doing the task incorrectly. Mascret et al. (2015) extended this 3×2 achievement goal model to the sports domain.

Meta-analyses indicate that freely adopted or experimentally induced approach goals (with either standard) are typically positively related to favorable achievement outcomes, including intrinsic motivation and performance (e.g., Hulleman et al., 2010; Rawsthorne & Elliot, 1999; Van Yperen et al, 2014; 2015). However, it has never been tested whether in the specific context of a sports match, self-based and task-based approach goals are in service of athletes' ultimate, overarching goal, that is, an other-based approach goal. Hence, in the present research, we argue that in the context of a sports match: (1) most athletes' overarching achievement goal is an other-based approach goal, and (2) their competence satisfaction is a function of other, subordinate goals as well (i.e., self-based and task-based approach goals).

Indeed, even a typical zero sum *situation* in which one's gain is equivalent to another's loss (e.g., a tennis match) does not imply exclusive other-based *motivation* (cf. Hays, 2012). Self-based goals are grounded in an *intra*-personal standard, that is, referring to a former version of oneself. Such a reliance on temporal comparison (Albert, 1977), which is largely under the athlete's own control, may refer to time (*"Running the 100m within 10 s"*), distance or height (*"To break the 8 m (distance) or 2 m (height) barrier"*), technique (*"Hitting draws and fades with a golf driver"*), or effort (*"Never give up in this match"*). In the example discussed above, Ranomi's self-based goal at the World Aquatics Championships 2017 was to post a personal best. Because swimmers are physically separated during races by having their own lane, no opponent could stop her from attaining her self-based goal.

She additionally set task-based goals in service of her other-based, overarching goal of securing a medal position (*i.e., a top-three rank*).

Task-based goals refer to the absolute demands of the task, and are set by breaking the self-based or other-based goal down into manageable chunks and creating a plan to achieve it (e.g., start speed, swimming speed per lap, stroke frequency, stroke length). Because task-based goals rely on standards that are inherent in the task itself, athletes receive direct, immediate, and ongoing feedback for their sport performances, which is positively associated with perceived competence, task interest, and satisfaction (for a review, see Elliot & Hulleman, 2017). For example, when confronted with other-based, unfavorable feedback, focusing on the task itself during the match tends to enhance competence satisfaction (Chatzisarantis et al., 2016; Kamarova et al., 2017). In contrast, an exclusive focus on other-based goals requires the ability to cognitively represent one's own and others' performances simultaneously. This may interfere with total absorption in the task and shift the athlete's attention away from the task through task-irrelevant interfering thoughts, including thoughts about ostensibly better-performing opponents and (the consequences of) not winning (e.g., Elliot et al., 2011; Thill & Cury, 2000). Such thoughts typically undermine performance attainment, and in the longer term make athletes vulnerable to structural frustration, chronic fear of failure, and burnout (e.g., Deffenbacher, 1980; Hatzigeorgiadis & Biddle, 2002; Sarason et al., 1986).

2. Identifying athletes' overarching achievement goal

Remarkably, when individuals are asked to indicate their *dominant* achievement goal in a particular context through forced-choice measures, research suggests that a great majority *does not* pursue other-approach goals. In sport contexts, the observed percentages of athletes with a dominant other-approach goal were not higher than 15% (e.g., Fernandez-Rio et al., 2014; 2017; Vansteenkiste et al., 2014; Van Yperen & Renkema, 2008, Study 3). Similar percentages have been observed in samples of students in educational contexts (e.g., Cecchini-Estrada & Méndez-Giménez, 2017; Scheltinga et al., 2016; Van Yperen, 2006; Van Yperen & Renkema, 2008, Study 2) and workers in an organizational context (Van Yperen & Orehek, 2013).

A similar pattern emerged in studies relying on measures that assessed the *strength or intensity* of achievement goals. Other-approach goals have been found to be consistently weaker than self-approach goals or task-approach goals, among workers (e.g., Dysvik & Kuvaas, 2013; Hamstra et al., 2014; Mascret et al., 2017; Sijbom et al., 2015; 2016), students (e.g., Bounoua et al., 2012; Cecchini-Estrada & Méndez-Giménez, 2017; Elliot et al., 2011; Lovejoy & Durik, 2010; McCabe et al., 2013), and (elite) athletes (e.g., Cumming et al., 2008; Daumiller et al., 2021; Fernandez-Rio et al., 2017, 2014; Gardner et al., 2017; Mascret et al., 2015), even when competing (Jury et al., 2015). However, for most competitive athletes, it can be assumed that competition is why they put in so much effort to prepare and train to give the best performance on a particular day. And when they win, or lose, on that particular day, they are likely to feel good, or bad, respectively, about their performance.

In line with this reasoning, there is evidence that individuals demonstrate a consistent, dominant reliance on other-based comparison information in their performance self-evaluations (Van Yperen & Leander, 2014; Wolff et al., 2018; Zell & Strickhouser, 2020). These individuals can be expected to have set, and to have pursued, other-based goals. This is typically not the case, though (Van Yperen & Leander, 2014). Rather, self-approach and task-approach goals, also referred to as mastery-approach goals (Elliot et al., 2011), are the most prevalent achievement goals across domains (e.g., Cecchini-Estrada & Méndez-Giménez, 2017; Fernandez-Rio et al., 2014; Scheltinga et al., 2016; Vansteenkiste et al., 2014; Van Yperen & Orehek, 2013). Moreover, these goals are typically the strongest achievement goals among athletes, workers, and students alike (e.g., Elliot et al., 2011; Mascret et al., 2015, 2017). However, also individuals who endorse self-based goals (either freely chosen or imposed) primarily rely on other-based standards when self-evaluating their performance (Van Yperen &

Leander, 2014). These findings mean that the goals people explicitly endorse are no guarantee of the type of feedback information they end up relying on when evaluating how well or poorly they did in a situation. Why do people indicate that other-based goals are less important to them while they demonstrate a dominant reliance on social comparison information when self-evaluating their own performance?

An explanation may be that relative to other-approach goals, self-approach and task-approach goals are perceived as ethically and socially more desirable (e.g., Darnon et al., 2009). Therefore, in the present study, we asked athletes to indicate their overarching goal knowing that all their other achievement goals (which they may find ethically and socially more desirable) are in service of their overarching goal. Furthermore, in the context of a sports match, reliance on an other-based goal is easy to justify. Also considering that relative to a loss (and a draw), a win is obviously the most desirable outcome in such a context, we hypothesized (*Hypothesis 1*) that in the context of a sports match, most athletes would indicate an other-approach goal as their ultimate, overarching goal. To validate athletes' forced-choice endorsement of an overarching other-approach goal, we also asked them whether they would be more satisfied with a win (no matter what) than with performing their best (regardless of the score).

As already discussed above, a robust finding in the extant achievement goal literature is that freely adopted or experimentally induced approach goals (regardless of the standard) are associated with better performance (e.g., Hulleman et al., 2010; Van Yperen et al., 2014, 2015). Hence, *Hypothesis 2* stated that athletes' competence satisfaction would be higher when their overarching achievement goal for matches was an approach goal (with either standard) rather than an avoidance goal (with either standard).

However, because athletes largely lack control over the other-based outcomes of matches (i.e., winning or losing), competence satisfaction may be higher when athletes with an overarching other-based goal rely on self-based and task-based criteria as well. As demonstrated by Van Yperen and Orehek (2013) in an organizational context, individuals who endorse a dominant achievement goal are also likely to pursue other, albeit (somewhat) weaker, achievement goals. Particularly individuals with a dominant other-approach goal indicated a strong reliance on other achievement goals as well. By focusing on the building blocks of their overarching desire to win, and task-based goals in particular, athletes receive direct, immediate, and ongoing feedback for their sport performances (Elliot et al., 2011). And maybe more importantly, attaining their self-based and task-based approach subgoals is likely to satisfy their need for competence, even in the case of defeat (Chatzisarantis et al., 2016; Kamarova et al., 2017). After a defeat, athletes may need some time to deal with it, and, eventually, to realize that they actually did a very good job by reaching their self-based or task-based goals. Hence, *Hypothesis 3* was that among athletes with overarching other-approach goals, competence satisfaction would be higher when their self-approach and task-approach subgoals were stronger. Note that empirical support for this hypothesis would provide suggestive evidence for a hierarchical achievement goal framework.

3. Method

3.1. Power analysis

Before data collection, we used the statistical power analysis program G*Power 3.1 to determine the required sample size. Because we anticipated different analyses (e.g., Chi-square analysis, Analysis of Variance, Regression Analysis), we run several G*Power analyses with different input parameters. The constants across the analyses were medium effect size 0.25 (Cohen, 1988), α error probability = 0.05, and Power (1-β error probability) = 0.80. This resulted in required sample sizes that were much smaller (<150) than the sample size we recruited in the predetermined time period of two weeks.

3.2. Participants

The sample consisted of 647 Dutch competitive korfball players (69.4% women) who had a complete dataset. The mean age was 26.49 years (SD = 9.33), ranging from 16 to 56. The athletes played competitively within a club either at the city/regional level (73%), national sub-top level (18.7%), national top level (7.7%), or international level (0.6%). Korfball is a gender-equal sport played by hand on a rectangular field of play, whereby two mixed teams (four men and four women per team) try to shoot a ball into the netless korf (basket) of the opposite team from 360° around the korf. The game was invented by a Dutch primary school teacher in 1902 and is currently played in about 70 countries around the world. In the Netherlands, there are approximately 500 korfball clubs and 80,000 korfball players.[1]

3.3. Procedure

After having obtained approval from the university's ethical committee, competitive korfball players were recruited using a convenience sample method. Specifically, a student, a competitive korfball player herself, approached players from her personal network online and posted an announcement on her Facebook page (which was shared almost 800 times). In a predetermined time period of two weeks, a total of 815 individuals clicked on the link to the Qualtrics questionnaire that she had provided in her messages and Facebook post. A total of 168 respondents were excluded from the analyses because they had not provided explicit informed consent prior to filling out the survey, had not indicated to play competitive korfball, were younger than 16 years of age (i.e., those who needed to have formal approval from their parents), did not have a complete dataset, or had indicated at the end of the survey that they (1) had not answered all the questions honestly, or (2) had not read and answered all the questions carefully (e.g., Cheung et al., 2017; Meade & Craig, 2012).

3.4. Measures

The measures we used in the current study were part of a larger questionnaire on sport motivation. For all multi-item measures, scale scores were obtained by averaging the scores on the individual items.

Achievement goals for korfball matches were assessed using six three-item scales that were based on the 3×2 Achievement Goal Questionnaire for Sport (Mascret et al., 2015). For each item, the general stem was: "In korfball, my goal for matches is …". Sample items for each scale are "… to do better than others" (Other-Approach; α = 0.77), "… to rise above myself "(Self-Approach; α = 0.90), "… to make the right decisions" (Task-Approach; α = 0.85), "… to avoid doing worse than others" (Other-Avoidance; α = 0.81), "… to avoid doing worse than I usually do" (Self-Avoidance; α = 0.87), and "… to avoid bad decisions" (Task-Avoidance; α = 0.91). Each item was followed by a seven-point response scale that ranged from (1) *never*, to (7) *always*.

Overarching achievement goal for korfball matches. Immediately after responding to the 3×2 Achievement Goal Questionnaire for Sport (see above), the athletes were asked to indicate their ultimate, overarching achievement goal *for korfball matches*. The six options were: (1) to win (Other-Approach), (2) to do better than I did before (Self-Approach), (3) to perform my tasks optimally (Task-Approach), (4) to avoid losing (Other-Avoidance), (5) to avoid doing worse than I did before (Self-Avoidance), and (6) to avoid making mistakes (Task-Avoidance). Each alternative ended with the phrase: " …. all my other goals are in service of this ultimate, overarching goal." Note that we added this phrase to obtain suggestive evidence for a hierarchical goal framework. That is, athletes were asked to indicate their overarching goal knowing that all their other achievement goals are in service of

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[1] For more specific information on this sport, visit https://korfball.sport

their overarching goal.

Satisfaction with a win versus own performance was assessed using two self-developed three-item scales. The general stem was: "In korfball, I am satisfied after a match if …". The three items of *Satisfaction with a win, no matter what* scale (α = 0.83) were: (1) … we have won, even when I have not performed to my potential; (2) … we have won, even when I have not executed my tasks very well; and (3) … we have won, no matter what. The three items of *Satisfaction with own performance, regardless of the score* scale (α = 0.93) were: (1) … I have reached my potential, even when we have lost the match; (2) … I have been able to achieve my best, regardless of the score; (3) … I have executed my tasks well, even if we lost. Each item was followed by a seven-point response scale that ranged from (1) *never*, to (7) *always*.

Competence satisfaction. Based on Van den Broeck, Vansteenkiste, De Witte, Soenens, & Lens (2010) competence satisfaction scale, we developed a four-item scale for the present context. The items were (1) In korfball, I feel I have the knowledge and skills to execute my tasks well; (2) I feel competent in korfball; (3) In korfball, I feel confident that I can accomplish even the most difficult tasks; (4) Overall (technically, physically, mentally), I am good at korfball. We provided a response scale ranging from (1) *not at all*, to (7) to *an extremely high extent*. Chronbach's alpha was .88.

4. Results

4.1. Descriptive data

In contrast to avoidance-oriented subgoals, approach-oriented subgoals for matches (either other-based, self-based, or task-based) were positively related to competence satisfaction (see Table 1), which is in line with previous findings (e.g., Hulleman et al., 2010; Van Yperen et al., 2014, 2015). Also, athletes' competence satisfaction was negatively related to their satisfaction with performing at their best (regardless of the score) and positively related to their satisfaction with a win (no matter what). This latter finding reconfirms that favorable other-based self-evaluations, or social comparisons, are positively related to individuals' competence satisfaction (cf. Van Yperen & Leander, 2014).

4.2. Identifying potential covariates: Sex, level, and age

To identify potential covariates for subsequent analyses, we tested for differences in sex, level, and age. The significant correlations in Table 1 indicate that, relative to women (M = 4.71, SD = 0.77), men (M = 5.03, SD = 0.84) were higher in competence satisfaction, $t(645) = 4.78, p < .001$, and relative to women (M = 3.72, SD = 1.15), men (M = 4.05, SD = 1.25) indicated that they would be more satisfied with a win (no matter what), $t(645) = 3.22, p = .001$. A Pearson chi-square test with athletes' overarching goal and sex as categorical variables indicated that no link exists between these variables, $\chi^2(5, N = 647) = 7.77, p = .17$. Next, we ran an analysis of variance with athletes' overarching goal standard (other vs. self vs. task) and goal valence (approach vs. avoidance) as between-subjects factors, and level and age as the dependent variables. We only observed a significant multivariate interaction between standard and valence, $F(4,1280) = 4.45, p = .001, \eta_p^2 = 0.01$ (main effects' multivariate $ps > .21$), which could be ascribed to age, $F(2, 641) = 8.81, p < .001, \eta_p^2 = 0.03$. Bonferroni follow-up tests (i.e., tests that have been adjusted for multiple comparisons) indicated that athletes with an overarching self-approach goal (M = 22.59, SD = 6.43) were younger ($ps < .01$) than their counterparts with an overarching other-approach goal (M = 26.73, SD = 9.16), self-avoidance goal (M = 28.00, SD = 10.57), or task-approach goal (M = 28.30, SD = 9.85). Because sex, level, and age were significantly related to some key variables, we statistically controlled for these factors in subsequent analyses of variance.

4.3. Hypothesis testing

Hypothesis 1 stated that in the context of a sports match, most people would indicate an other-approach goal as their ultimate, overarching goal. As shown in Table 2, a majority (51.6%) indeed indicated an other-approach goal as their ultimate, overarching goal for korfball matches. Tested against an equal distribution of the six achievement goals, the observed distribution was significant, $\chi^2(5, N = 647) = 628.83, p < .001$. Testing the other-approach goal (51.6%) against the #2 ranked goal (task-approach: 18.9%, see Table 2) revealed a significant chi-square, $\chi^2(1, N = 456) = 98.56, p < .001$. Hence, in the context of a sports match, an other-approach goal was more prevalent than the #2 ranked goal, and accordingly, athletes' most preferred overarching goal, which provides empirical support for *Hypothesis 1*. Note that in line with this finding, athletes' strongest achievement goals were other-approach goals and task-approach goals (see Table 1).

To validate athletes' forced-choice endorsement of an overarching other-approach goal, a mixed analysis of covariance was conducted, with the overarching goal's standard (other vs. self vs. task) and valence (approach vs. avoidance) as between-subjects factors, and satisfaction (with win vs. with best performance) as within-subjects factor, and sex, age, and level as covariates. The two-way interaction between standard and satisfaction, $F(2,638) = 19.05, p < .001, \eta_p^2 = 0.06$, was qualified by the anticipated three-way interaction, $F(2,638) = 5.01, p = .01, \eta_p^2 = 0.02$. As shown in Fig. 1, only other-approach athletes were more satisfied with a win (no matter what) than with performing their best (regardless of the score), which validates athletes' forced-choice endorsement of an overarching other-approach goal. Athletes with an overarching self-based or task-based achievement goal (either approach or avoidance) were more satisfied with performing their best (regardless of the score) than with a win (no matter what). *Hypothesis 2* stated that athletes' competence satisfaction would be higher when their overarching achievement goal for matches was an approach goal (with either standard) rather than an avoidance goal (with either standard). Hence, we ran an analysis of covariance with athletes' overarching goal standard (other vs. self vs. task) and goal valence (approach vs. avoidance) as between-subjects factors, competence satisfaction as the dependent variable, and sex, age, and level as covariates. The expected main effect of valence was significant, $F(1,638) = 22.88, p < .001, \eta^2 = .04$. As anticipated, athletes' competence satisfaction was higher when their overarching achievement goal for matches was an approach goal (M = 4.81, SD = .77) rather than an avoidance goal (M = 4.39, SD = .87), which provided empirical support for *Hypothesis 2*. However, this main effect was qualified by the interaction between standard and valence, $F(2,638) = 8.14, p < .001, \eta^2 = .03$.[2] As can be seen in Fig. 2, Bonferroni follow-up tests indicated no differences in competence satisfaction between athletes endorsing an overarching self-based approach goal and athletes with a self-based avoidance goal. Hence, the observed pattern only provided partial empirical support for *Hypothesis 2*: Relative to athletes with other-avoidance and task-avoidance goals, those with an overarching other-approach and task-approach goal, respectively, were higher in competence satisfaction.

Hypothesis 3 was that among athletes with overarching other-approach goals, competence satisfaction would be higher when their self-approach and task-approach subgoals were stronger. Therefore, we ran analyses of covariance to test the regression coefficients of the slopes between athletes' subgoals for matches and competence satisfaction (statistically controlling for the subgoal's main effect, sex, age, and level). Specifically, we tested whether the regression weights of the dependent variable (i.e., competence satisfaction) on the covariate "strength of the subgoal" were the same across athletes with different overarching achievement goals. A significant multivariate effect (see

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[2] This interaction effect also qualified the main effect of standard, $F(2,638) = 5.51, p = .004, \eta^2 = .02$.

Table 1
Means, standard deviations, and correlations[a] (n = 647).

	M	SD	2	3	4	5	6	7	8	9	10	11	12
1. Age	26.49	9.33	-.24	.12	-.01	.03	-.10	-.30	-.14	-.12	-.16	-.15	-.01
2. Level	1.36	.65	–	.13	-.02	-.18	.18	.16	.16	.05	.09	.06	.27
3. Sex[b]	-.39	.92		–	.13	-.05	.09	.08	.05	-.01	.01	-.04	.19
4. Sat. with win	3.82	1.19			–	-.14	.21	.06	.03	.18	-.04	-.03	.18
5. Sat. with best perf.	4.00	1.36				–	-.28	-.05	-.06	-.14	.02	-.04	-.13
6. Other-approach[c]	5.36[a]	1.29					–	.47	.41	.63	.34	.34	.27
7. Self-approach[c]	4.74[b]	1.48						–	.48	.39	.48	.41	.26
8. Task-approach[c]	5.50[a]	1.02							–	.34	.42	.52	.23
9. Other-avoidance[c]	4.89[b]	1.58								–	.52	.52	.09
10. Self-avoidance[c]	4.48[c]	1.70									–	.60	.06
11. Task-avoidance[c]	4.56[c]	1.56										–	.06
12. Competence Sat.	4.81	.80											–

Notes:
[a] Correlations >.12 are significant at $p < .001$
[b] Men (+1), Women (−1)
[c] Athletes' achievement goals; means that differ significantly (Bonferroni tests, $p < .001$) have different letters

Table 2
Distribution of athletes' ultimate, overarching goals in a competitive situation (n = 647).

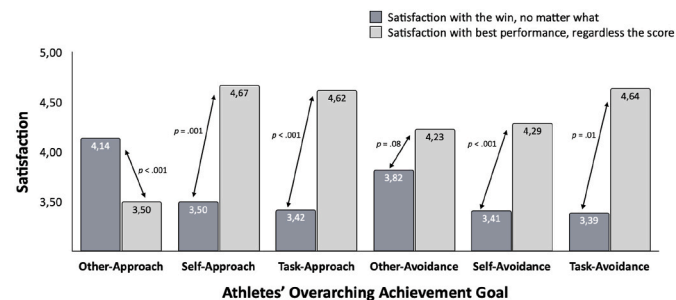|		Valence		
		Approach	Avoidance	
Standard	Other	51.6%	5.3%	56.9%
	Self	11.7%	9.6%	21.3%
	Task	18.9%	2.9%	21.8%
		82.2%	17.8%	

Fig. 1. Satisfaction with a Win (No Matter What) Versus Satisfaction with Best Performance (Regardless of the Score) as a Function of Athletes' Overarching Achievement Goal For Matches (n = 647; Means Adjusted for Sex, Age, and Level).
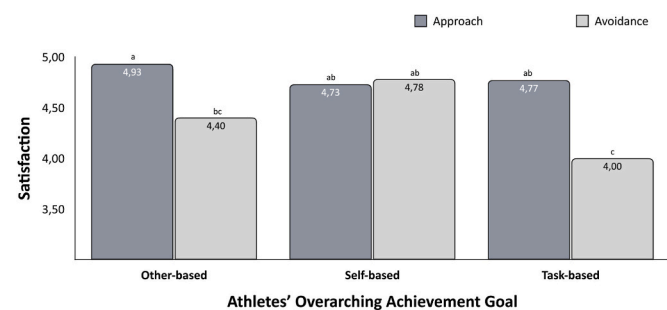

Fig. 2. Competence Satisfaction as a Function of Athletes' Overarching Achievement Goal For Matches (n = 647; Means Adjusted for Sex, Age, and Level).
Note: Means that differ significantly (Bonferroni tests, $p < .01$) have different letters

Table 3, second column) indicates that the different slopes did not run in parallel. However, we were primarily interested in the univariate effects, that is, the significance and the direction of the slopes. As expected, Table 3 (columns 3–4) shows that among athletes with an overarching other-approach goal, self-approach and task-approach subgoals (and also matching other-approach goals) were positively related to competence satisfaction; this provided empirical support for *Hypothesis 3*.

Unexpectedly, Table 3 shows that the three approach-oriented subgoals were positively related to competence satisfaction among athletes with an overarching self-based avoidance goal, too. This may explain why competence satisfaction in this group of athletes was relatively high; that is, as high as in groups with an overarching self-based approach goal (see Figure 2).

5. Discussion

The extant achievement goal literature suggests that across domains, including the sport domain, the prevalence of other-approach goals is typically very low (e.g., Cecchini-Estrada & Méndez-Giménez, 2017; Fernandez-Rio et al., 2014; Scheltinga et al., 2016; Vansteenkiste et al., 2014; Van Yperen & Orehek, 2013). This is remarkable because, particularly in sport contexts, excellence and success are defined in terms of individuals' achievements relative to others, as exemplified by wins, medals, and titles (cf. Harackiewicz et al., 1998; Klein, 1997). Furthermore, in sports competitions, the desire to win (i.e., an other-approach goal) is almost automatically enforced (Hardy et al., 1996; Van Yperen, 2021). Also considering that, relative to a loss (and a draw), a win is obviously the most desirable outcome, the aim of the present research was to demonstrate that in the specific context of a sports match, most athletes' overarching achievement goal is an other-approach goal.

An obvious reason for the high prevalence and strength of self-based and task-based approach goals across domains (e.g., Cecchini-Estrada & Méndez-Giménez, 2017; Elliot et al., 2011; Fernandez-Rio et al., 2014; Mascret et al., 2015, 2017; Scheltinga et al., 2016; Vansteenkiste et al., 2014; Van Yperen & Orehek, 2013) is that, in any context, people genuinely find these goals worth pursuing. However, their high prevalence can also be explained by the ethical and social desirability of these goals (e.g., Darnon et al., 2009). Therefore, in the present study, we explicitly indicated that the pursuit of an overarching achievement goal may be accompanied by the endorsement of other important, albeit subordinate, achievement goals. As anticipated, the findings showed that in the context of a sports match, the ultimate, overarching goal of the majority of the athletes (51.6%) was an other-approach goal. The finding that only the athletes with other-approach goals were more satisfied with a win (no matter what) than with performing their best

Table 3
Links between athletes' achievement goals for matches and their competence satisfaction within each overarching achievement goal (n = 647).

		Athletes' Overarching Achievement Goal											
		Approach						Avoidance					
		Other		Self		Task		Other		Self		Task	
	$F_{(6,632)}$	B	CI	B	CI	B	CI	B	CI	B	CI	B	CI
Other-approach	4.80**	.16**	.08,.24	.05	-.07,.18	.10	-.00,.20	.12	-.08,.32	.15*	.04,.27	.14	-.10,.38
Self-approach	7.00**	.14**	.08–.19	.03	-.13,.19	.06	-.03,.15	.17	.01,.33	.21*	.08,.33	.19	-.02,.40
Task-approach	5.47**	.14**	.06,.22	.10	-.09,.29	.16	.01,.30	.31*	.09,.54	.22*	.06,.39	-.10	-.37,.18
Other-avoidance	3.08*	.03	-.02,.08	-.05	-.15,.05	.03	-.05,.11	.42**	.17,.67	.13	.01,.25	-.02	-.28,.24
Self-avoidance	1.26	.04	-.01,.08	.01	-.09,.11	-.04	-.12,.05	.07	-.10,.25	.11	-.01,.23	-.03	-.27,.20
Task-avoidance	2.20	.05	-.00,.10	-.04	-.15,.07	.04	-.05,.12	.17	.02,.33	.07	-.06,.19	-.25	-.56,.06

*$p < .01$ **$p < .001$

(regardless of the score), validated athletes' goal preference for an other-based approach goal.

The most important contribution to the extant achievement goal literature is that the current findings provide thought-provoking and suggestive evidence for a hierarchical achievement goal system. Specifically, in the context of a sports match, athletes' competence satisfaction was a function of their overarching other-approach goal as well as their subordinate self-approach and task-approach goals. Indeed, an exclusive reliance on an overarching other-approach goal may jeopardize athletes' competence satisfaction. Athletes largely lack control over the attainment of their desired outcome of winning the match, which is exactly why an other-approach goal should be considered a dream or desire, which most athletes appear to place at the top of their hierarchical goal system or framework (cf. Kruglanski et al., 2002; Williams, 2013). For athletes' competence satisfaction, and accordingly, the maintenance of their enjoyment, self-confidence, and long-term, sustainable development in sport, such a superordinate dream or outcome goal should be used to flexibly organize self-based goals and their means of attainment, or task-based goals. These latter lower-order goals, or tactics, are typically more numerous, context-specific, short-term (proximal), and substitutable (Duckworth & Gross, 2014).

The present findings suggest that the higher the competence satisfaction of athletes with an overarching other-approach goal, the stronger their self-approach goals and task-approach goals for matches. Although the present data did not allow the underlying process to be tested, we speculate that, particularly for athletes with an overarching other-approach goal, it is effective to focus on self-based and task-based approach goals to increase their chances of ultimately achieving their overarching other-based approach goal (cf. Hardy et al., 1996; Van Yperen, 2021). As discussed in the introduction, to secure a win, medal, and title, it is most effective to focus on the task itself and other personally controllable factors rather than on one's largely uncontrollable performance relative to others. Moreover, particularly in the case of a defeat, attaining their self-based and task-based approach subgoals may satisfy athletes' need for competence to a certain extent (Chatzisarantis et al., 2016; Kamarova et al., 2017). Because other-approach athletes are less satisfied with performing well than with a win, they probably need more time to deal with defeats, and to eventually realize that they performed well by reaching their self-based or task-based goals. Overall, making such goal systems visible and explicit likely helps athletes to effectively self-regulate and monitor their hierarchically structured goal pursuit. It is important to note that this approach explicitly acknowledges athletes' strong desire to win in the context of a sports match. It likely increases athletes' awareness of what actions, means, and subgoals may facilitate their focal objective (Zimmerman et al., 2017). As illustrated by Ranomi's case (see Introduction), her task-approach goals regarding speed (start, swimming, turn, and finish) and stroke (frequency and length) were the building blocks of her self-approach goal (a personal best), and ultimately, her largely uncontrollable other-approach goal (a spot on the podium).

When resources are limited, goal hierarchies may also help athletes

to de-activate or inhibit rival goals which are deemed less important. Successful goal pursuit entails maintaining commitment to one's personally controllable, focal goals; this is most likely to occur for individuals high in self-control and grit (Van Yperen, 2021). *Self-control* refers to the capacity to regulate attention, emotion, and behavior in the presence of temptation (Baumeister et al., 2007); *grit* is the tenacious pursuit of a dominant superordinate goal despite setbacks (Duckworth et al., 2007). Thus, self-control is typically associated with attaining short-term process goals, whereas grit is more tightly coupled with achieving exceptional long-term outcome goals (Duckworth & Gross, 2014). Self-control and grit are particularly important in situations in which pursuing a negative subordinate proximal goal (e.g., training in wet and cold weather, accepting a nasty and selfish star player in your team) is required as a stepping stone to attaining a positive superordinate distal goal (e.g., becoming world champion).

Unexpectedly, the three approach-oriented subgoals (i.e., other-based, self-based, and task-based) were positively related to competence satisfaction among athletes with an overarching self-avoidance goal, too. This may explain why competence satisfaction in this group of athletes was as high as in groups of athletes holding an overarching self-approach goal (see Figure 2). Furthermore, particularly in the context of a sports match, an overarching self-avoidance goal is not necessarily ineffective (Van Yperen et al., 2014). That is, athletes may consider not doing worse than they usually do to be sufficient for a win, a particular rank, or another desirable other-based outcome. In matches, when the pressure is high, there is some evidence that the best-performing athletes are those who did not perform worse than they did before (Weisinger and Pawliw-Fryn, 2015). Particularly in high-stakes matches, athletes typically underachieve relative to themselves; this has been acknowledged by top-level athletes such as Michael Jordan, maybe the greatest basketball player of all time. One of his most famous quotes is: *"Twenty-six times, I've been trusted to take the game-winning shot and missed. I've failed over and over and over again in my life"* (Weisinger and Pawliw-Fryn, 2015, p. 26). By implication, attaining a self-avoidance goal in a sports match context (i.e., not having performed beneath one's current capacity) is a great accomplishment which is likely to satisfy athletes' competence satisfaction.

5.1. Strengths and limitations

The present research has at least three main strengths. First, we add to the extent achievement goal literature by demonstrating that, in the context of a sports match, a majority of participants indicated an other-based approach goal as their overarching achievement goal. Second, and most importantly, we provide thought-provoking and suggestive empirical evidence that, in a competitive sport context, the multiple goals athletes typically hold can be structured into a hierarchical goal system or framework. That is, athletes' competence satisfaction was a function of their overarching other-based approach goal as well as their subordinate self-based and task-based approach goals. A third strength of the present study is the large and diverse sample (in terms of sex, age,

and level) of competitive athletes.

Balanced against these strengths, limitations need to be acknowledged. First, our self-report data have the inherent problem of common method variance. Second, the present cross-sectional data did not allow us to specifically test causality and the underlying process. For example, in future studies, it needs to be explored if, and how, the current findings fit within other hierarchical models of achievement motivation in which distal, appetitively based dispositions (e.g., need for achievement) and aversively based dispositions (e.g., fear of failure) predict the adoption of overarching and subordinate achievement goals, likely through the activation of more proximal, underlying autonomous and controlling reasons (Elliot & Church, 1997; Elliot & Hulleman, 2017; Michou et al., 2014; Vansteenkiste et al., 2014). Third, we relied on the convenience sample method as recruitment strategy, and our sample represents only one nationality (i.e., Dutch) and one unique sport (i.e., korfball). Further research is needed to test whether the current results can be replicated and extended across nations, within samples recruited through other sampling strategies, among athletes from other sports, and with more specified achievement goals. In future studies that include team sports, for example, the shared other-based team goal may be broken down into subordinate goals at both the team level and the individual level. Self-based and task-based goals may also be measured at more specific levels, which is typically more difficult to accomplish in team sports (e. g., playing zone defense, putting collective pressure on the opponent, or quality of the passing). Another interesting avenue for future research may be whether specifying subordinate goals and evaluation criteria can help athletes to increase their competence satisfaction. This is most likely to occur when after games, coaches evaluate the team and the individual athletes primarily on the basis of self-based and task-based criteria, regardless of the score. The effect of other-based goals on athletes' competence satisfaction, by contrast, will take care of itself.

6. Conclusion

For a majority of athletes, *the goal of winning* appears to be the most important in the context of sports matches, but self-based and task-based approach goals were also important for their competence satisfaction. We speculate that athletes with a strong desire to win acknowledge that they need to focus on what needs to be done to ultimately attain the outcome they desire: Coming out victorious. Making their goal systems visible and explicit likely helps them to effectively self-regulate, to monitor their hierarchically structured goal pursuit, and to enhance their competence satisfaction.

Declaration of Competing Interest

None

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