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# Goal motives and multiple-goal striving in sport and academia: A person-centered investigation of goal motives and inter-goal relations

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#### ABSTRACT

*Objectives:* This investigation extended the goal striving literature by examining motives for two goals being pursued simultaneously. Grounded in self-determination theory, we examined how student-athletes' motives for their sporting and academic goals were associated with inter-goal facilitation and interference.

Design: Cross-sectional survey.

*Methods*: UK university student-athletes (*n* = 204) identified their most important sporting and academic goals. They then rated their extrinsic, introjected, identified and intrinsic motives for these goals and completed questionnaires assessing inter-goal facilitation and interference.

*Results:* Using a person-centered approach via latent profile analysis, we identified three distinct profiles of goal motives. Auxiliary analyses showed that the profile with high identified motives for both goals reported greater inter-goal facilitation.

*Conclusions:* Extending the previous literature, the findings demonstrate the benefits of autonomous motives when simultaneously pursing goals in sport and academia.

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#### 1. Introduction

Grounded in self-determination theory (SDT),<sup>1</sup> a major principle of the self-concordance (SC) model<sup>2</sup> is that goal motivation can vary in both quality and quantity. Autonomous motivation, reflecting intrinsic and identified motivation regulations, is underpinned by personal interest, importance or enjoyment in goal pursuit. Controlled motivation is underpinned by internal or external pressures, aligned with introjected and extrinsic motivation. SC model-based research has generally examined one goal in a single domain, such as education,<sup>3</sup> health,<sup>4</sup> and sport.<sup>5-7</sup> In reality, individuals often simultaneously pursue multiple goals across contexts.<sup>8</sup> Only one study has explored motivation in multiple-goal pursuit. Gorges et al.9 linked goal self-concordance (autonomous minus controlled motives) to the affective responses associated with multiple goal conflict. To generate feelings of goal conflict, junior scientists considered an instance where they had recently "felt torn" between two activities in their research and teaching. Participants identified a goal and rated their motives for each of these activities. Gorges

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et al.<sup>9</sup> found that high goal self-concordance can protect individuals from negative affect when experiencing goal conflict. Further, for self-concordant goals, conflict was viewed as challenging rather than frustrating.

Gorges et al.'s<sup>9</sup> findings show the importance of identifying the motives underpinning concurrent goal pursuits. However, goal conflict was investigated in one domain only. Furthermore, the relations between goals were not examined. When pursuing multiple goals, individuals may experience inter-goal facilitation or interference.<sup>10</sup> Inter-goal facilitation - the pursuit of one goal increasing the chance of success in the other goal - occurs through instrumental relations (progress in one goal resulting in progress toward the other goal) and overlapping goal strategies (actions having positive effects on both goals). Inter-goal interference, whereby pursing one goal reduces the likelihood of attaining another, operates through resources constraints (striving for one goal detracts time, effort or resources from another goal) or incompatible goal strategies (strategies for one goal conflict with completing another goal). Facilitation is linked with higher levels of goal pursuit, whereas interference is negatively associated with well-being.<sup>10</sup> The present study extends the literature by examining the association between goal motivation and inter-goal relations.





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A central tenet of SDT<sup>1</sup> is that autonomous motivation is more adaptive because it reflects greater integration with the self. As such, autonomous motivation can lead to a range of positive outcomes, and buffer negative outcomes. Conversely, controlled motivation is predicted to lead to negative outcomes, with no buffering effect. Goal motives research has generally supported these propositions.<sup>7,11,12</sup> Healy et al.<sup>12</sup> found autonomous goal motives to be positively and negatively related to well- and illbeing, respectively. Furthermore, autonomous motives have been shown to lead to enhanced persistence toward an increasing difficult goal<sup>5</sup> and greater flexibility when goals have become unattainable.<sup>13</sup> Therefore, it may be that when goals are pursued for reasons of personal importance or enjoyment, individuals can be flexible in their allocation of resources. In a multiple goal context, autonomous motives may allow for greater facilitation between goals. In the present study we expected that autonomous motives would be positively related to inter-goal facilitation and negatively associated with interference. Controlled motivation has generally been found to be unrelated to goal attainment.<sup>5,14</sup> In a multiple goal context, this might be due to greater interference between goals. Hence, we hypothesized that controlled motives would be positively associated with inter-goal interference, and unrelated to facilitation. We explored these hypotheses in university student-athletes striving for both sporting and academic goals, as while some student-athletes struggle to balance their sporting and academic goals, others are more successful at managing multiple goal pursuits.<sup>15</sup> Motivation can vary across different situations and contexts,<sup>16</sup> with individuals feeling more autonomous in one context and less so in another. Thus, variations in goal motivation across contexts might be associated with differences in studentathletes' inter-goal relations.

In the original SC model, Sheldon and Elliott<sup>2</sup> combined autonomous and controlled motives to assess self-concordance. Research has also examined autonomous and controlled motives separately to explore their unique contribution to goal-related outcomes.<sup>7,11,12</sup> However, combinations of goal motives have not been examined in the literature. In the wider SDT literature,<sup>17</sup> examining general motivation rather than specific goal motivation, it has been shown that people can experience varied combinations of motivation regulations. In this study we used a person-centered approach, whereby we created goal motives profiles for both academic and sporting goals.

Within the SDT literature, person-centered research has demonstrated that more optimal motivation profiles (i.e. high autonomous, low controlled motivation) are associated with better outcomes (e.g. performance, effort) than those with less optimal profiles (i.e. low autonomous, high controlled motivation or moderate autonomous, moderate controlled motivation).<sup>17,18</sup> However, other research has suggested that high levels of controlled motivation may not be detrimental, as long as autonomous motivation regulations are also high.<sup>19-21</sup> Within our research, it was also plausible that individuals would report different combinations of goal motives across their academic and sporting goals. For example, student-athletes might enjoy their sporting goal, and therefore report higher levels of autonomous and lower levels of controlled motives in pursuit of this goal, whereas they might be pursuing their academic goal with different levels of autonomous and controlled motives. We expected that profiles in which intrinsic and identified goal regulations (i.e., autonomous motives) for both goals were high, would experience greater inter-goal facilitation and lower interference, regardless of the level of extrinsic and introjected (i.e., controlled) motivation. Additionally, we hypothesized that profiles with lower levels of autonomous goal motives, or with mixed motives for sporting and academic goals, would experience less inter-goal facilitation and more interference.

#### 2. Methods

Following ethical approval from two UK universities, we recruited 204 university students (103 male, 101 female, M age = 21.00 years, SD age = 2.09) who had been participating in their sport for  $7.69 \pm 5.29$  years. A questionnaire pack was completed either online or on paper. Data collection occurred around 4–6 weeks into an academic semester, as we felt that students would have commenced goal striving for both goals by this point.

Participants identified their most important sporting and academic goal for the remaining academic year, and rated their motivation for each goal. Four items (one for each goal motivation regulation) that have been used extensively in previous goal striving research,<sup>2,7,12</sup> tapped extrinsic ("Because someone else wants you to"), introjected ("Because you would feel ashamed, guilty, or anxious if you didn't"), identified ("Because you personally believe it's an important goal to have") and intrinsic ("Because of the fun and enjoyment the goal provides you") goal motives on a 1 (*not at all*) to 7 (*very much so*) scale.

The Inter-goal Relations Questionnaire<sup>10</sup> was completed to assess facilitation and interference. The facilitation scale had one item each for instrumental goal relations ("The pursuit of my sporting goal sets the stage for the realization of my academia goal") and overlapping goal attainment strategies ("How often has it happened that you did something in the pursuit of your sporting goal that was simultaneously beneficial for your academic goal?"). For the interference scale, three items assessed resource constraints (e.g., "How often has it happened that because of the pursuit of your sporting goal, you could not invest as much energy into your sporting goal as you would have liked to?"), and a fourth measured incompatible goal attainment strategies ("How often has it happened that you did something in the pursuit of your academic goal that was incompatible with your sporting goal?"). Participants rated the impact of the sporting goal on their academic goal, and vice versa, in reference to the last month on a 1 (Never or rarely) to 5 (Very often) scale. For each goal, mean facilitation and interference scores were created from the respective items.

To create goal motives profiles, latent profile analysis (LPA) was performed using MPlus 7.1<sup>22</sup> with MLR estimation. We included in the analysis the four motivation regulations for each goal; eight variables were used in total. This approach is different to previous SC model research,<sup>7,11,12</sup> where the extrinsic and introjected, and identified and intrinsic scores have been aggregated to form controlled and autonomous goal motives respectively. Our approach was based on two reasons. First, the four items represent separate (albeit related) motivation regulations. Additionally, research has often found these goal motives aggregates have poor internal reliability.<sup>7,12</sup>

While there is no "gold standard" for determining the optimum number of profiles in LPA, it is worthwhile to explore a range of solutions and select the number of profiles based on the goodness-of-fit indices, the nature of the profiles, and theoretical considerations.<sup>23,24</sup> It is also possible to test if a more complex model offers a better fit to the data than a more parsimonious one. We examined the model fit criteria from 1 to 5 profile solutions. We primarily used the bootstrapped log-likelihood ratio test (BLRT) as this is recommended for sample sizes of  $n < 200^{25}$  We also inspected the entropy criterion values; higher values indicate a better model fit.<sup>26</sup> Furthermore, the goal motives means for each profile were examined in terms of relevance to theory. To examine between profile differences in inter-goal interference and facilitation, we utilized the AUXILIARY command in MPlus. This allows for the equality of outcome means hypothesis to be tested across profiles via a Wald chi-square test.<sup>27</sup>

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