

**Task Values and Future Expectations of
Finnish Adolescent Athletes:
A Person-Oriented Approach**

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According to the Eccles' Expectancy-Value model (1983), adolescents' achievement and achievement related choices are determined by two factors: expectancies for success and subjective task- or activity-related values. The present study examined the patterns of task values that Finnish student-athletes show at the beginning of their first year in sports upper secondary school; and the extent to which these patterns are associated with their athletic and academic future expectations. The role of various background variables in the patterns of task values was also investigated. With the means of latent profile analysis three classes of adolescents were identified: (1) sport motivated, that is, those who placed high value on sports, (2) dual motivated, that is, those who placed high value on both education and sports, and (3) low sport motivated, that is, those who did not value highly either domain, especially sports. Athletes showing dual motivated pattern had higher academic future expectations than others, whereas those showing sport motivated pattern had higher athletic future expectations than others. The results showed further that athletes' school grades and type of sport were associated with the motivational patterns typical for them.

Key words: task values, adolescent athletes, dual career, upper secondary school

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Termi 'kaksoisura' tarkoittaa huippu-urheilun ja koulutuksen yhdistämistä. Aikaisempien tutkimusten mukaan opiskelijaurheilijat pitävät usein myös koulutusta tärkeänä ja voivat olla motivoituneita niin urheiluun kuin opiskeluun, mutta he kuitenkin usein asettavat urheilun etusijalle, mikä voi aiheuttaa haasteita onnistuneen kaksoisuran luomisessa. Tässä tutkimuksessa tarkasteltiin suomalaisten opiskelijaurheilijoiden motivaatiota koulun ja urheilun suhteen lukion alussa tutkimalla minkälaisia profiileita nuoret muodostavat motivoituneisuuteensa perusteella ja myös, kuinka nämä profiilit ovat yhteydessä heidän opiskeluun ja urheiluun liittyviin tulevaisuuden odotuksiinsa. Lisäksi selvitettiin erilaisten taustatekijöiden vaikutus. Tutkittavien motivaatiota tutkittiin Ecclesin ym. (1983) kehittämän odotusarvoteorian pohjalta. Tutkimusmenetelmänä käytettiin latenttia profiilianalyysiä, jonka perusteella löydettiin kolme ryhmää: (1) urheilumotivoituneet, eli he jotka arvostivat urheilua kovasti, (2) motivoituneet, eli he jotka arvostivat sekä koulua että urheilua ja (3) urheilumotivoitumattomat, eli he jotka eivät olleet kovin motivoituneita kumpaankaan, varsinkaan ei urheiluun. Tulosten mukaan motivoituneilla oli korkeammat odotukset tulevan koulutuksensa suhteen, kun taas urheilumotivoituneilla oli korkeammat tulevaisuuden odotukset urheilun parissa. Myös nuorten keskiarvo koulussa ja urheilulajin tyyppi (joukkueurheilu vs. yksilölaji) oli yhteydessä heille tyypilliseen motivaatioryhmään. Tutkimus tuotti uutta tietoa suomalaisten opiskelijaurheilijoiden motivaatiosta lukion alussa. Tämä tieto on hyödyllistä mietittäessä käytäntöjä, jotka mahdollistavat lahjakkaiden opiskelijaurheilijoiden kaksoisuran onnistumisen.

Avainsanat: motivaatio, opiskelijaurheilija, kaksoisura, lukio

Introduction

A high level elite athletic career in sport is rather short and, thus, it is important to have a good education to make life after sport easier. However, to be a high level athlete and still have time for school is a demanding task due to, for example, time constraints, overlapping schedules, and conflicting goals. Not surprisingly, aspiring youth athletes often struggle to combine their athletic career with schooling. Many studies have shown that student-athletes tend to prioritize sport over school (Ryba et al., 2016) and their athletic aspirations might detract their possibilities to succeed in school (Adler & Adler, 1985; Cosh & Tully, 2014; Simons, Van Rheenen, & Covington, 1999). Indeed, high motivation has been shown to underpin task engagement and persistence both in sport (Pelletier, Fortier, Vallerand, & Brière, 2001) and education (Allen, 1999; Kuh, Cruce, Shoup, Kinzie, & Gonyea, 2008; Pintrich, 2003), whereas lack of motivation has been shown to increase the risk of dropping out from both sport (Jõesaar, Hein, & Hagger, 2011; Sarrazin, Vallerand, Guillet, Pelletier, & Cury, 2002) and school (Vallerand, Fortier, & Guay, 1997). Task motivation (Eccles et al., 1983) has been related to high expectations and high performance in the domain of sport (e.g., Eccles & Harold, 1991) and education (e.g., Berndt & Miller, 1990; Viljaranta, Nurmi, Aunola, & Salmela-Aro, 2009). Hence, it is plausible that sustained motivation in sport and school is a key factor in the construction of dual career pathways through adolescence. The present study aims to examine what kinds of patterns of task values student-athletes have at the beginning of their upper secondary school and how these patterns are related to their future expectations concerning sport and education. Moreover, the role of gender, type of sport, grade point average (GPA) and athletic status in the patterns of task values typical for student-athletes was also investigated.

Dual career among student-athletes

The term ‘dual career’ refers to the athletes’ challenge of combining elite sport career with education/work (EU Guidelines on Dual Careers of Athletes, 2012). From the developmental perspective, athletes face unique challenges along their sporting lifespan that take place at psychological, social, academic/vocational and financial levels (see Fig 1). As conceptualised by the Holistic Athletic Career model (Wylleman & Lavallee, 2004; Wylleman, Reints & De Knop, 2013) adapted to the Finnish context by Ryba and colleagues (2016), athletes’ developmental transitions in sport are in concurrent and reciprocal interaction with transitions occurring in other life domains, such as educational and vocational development. The increasing requirement for athletes to successfully initiate, develop and finalize their athletic careers in combination with the pursuit of education and occupational trajectories while simultaneously resolving other developmental tasks (e.g., identity formation, achieving financial independence, etc.) has been encapsulated under the term “dual careers” (EU Guidelines on Dual Careers of Athletes, 2012). The promotion of dual careers to ensure that young athletes receive education and vocational training alongside their sporting training reflects the Europe 2020 Strategy such as prevention of school dropouts, more graduates in higher education, and better youth employability.

Early literature on dual career research showed evidence for a negative association of high performance sport with academic success (Adler & Adler, 1985; Purdy, Eitzen & Hufnagel, 1982) while recent studies suggest that talented athletes tend to be highly motivated to do well in both domains (Durand-Bush & Salmela, 2002; Lupo et al., 2015; Umbach, Palmer, Kuh & Hannah, 2006). The limitation of previous research is that it has mainly focused on examining dual career of university level athletes (e.g., Adler & Adler, 1985; Aries & Richards, 1999; Gaston-Gayles, 2004; Simons et al., 1999). Less is known about the

challenges confronted by young student-athletes during earlier stages of their career.

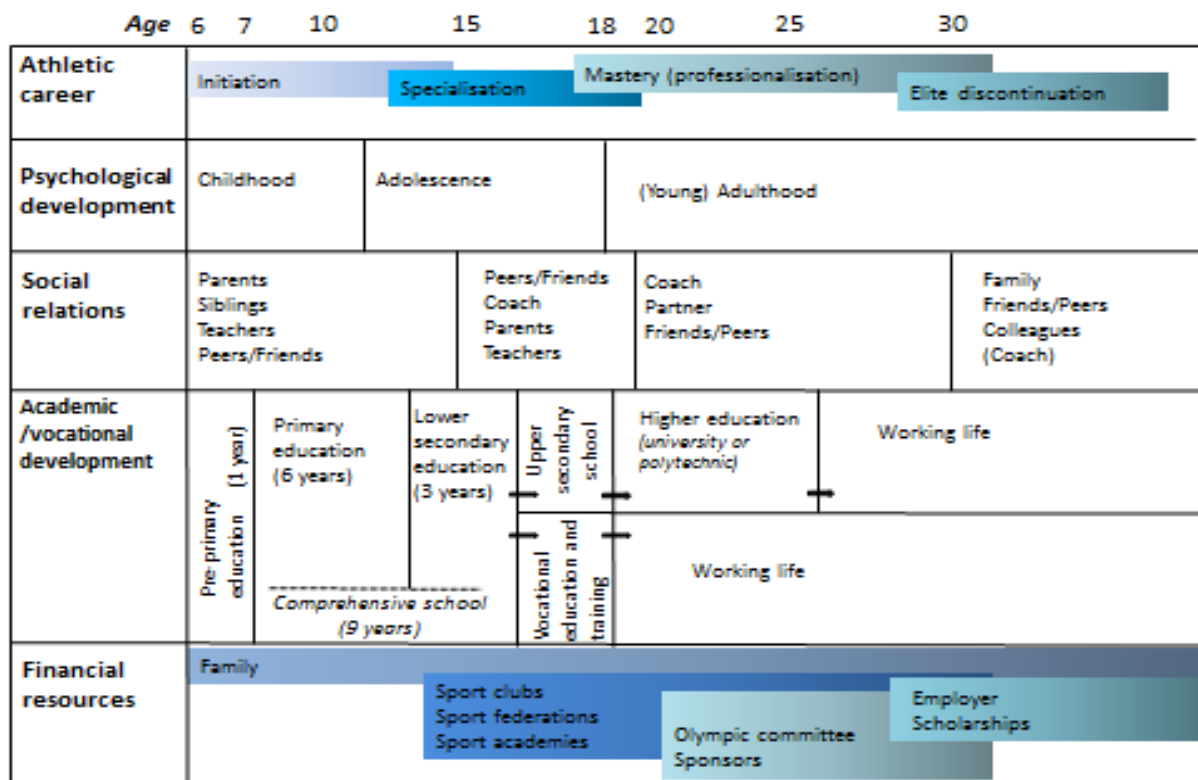


Figure 1. Finnish version of the holistic athletic career model.

The start of upper secondary school is one of the critical transitions for adolescent athletes as at that time the performance standards become higher both in sports and in school which increases the challenge to succeed in both. At this point many athletes go through a transition in their competition level from junior level to senior level, which is known for its high dropout rate (Ryba et al. 2016). For example, Bussmann and Alfermann (1994) found in their study with female track-and-field athletes, that only 14 of 51 elite junior athletes made it to the senior level. Moreover, when the standards become higher in both domains, the elevated pressure increases student-athletes' risk of burnout. For example, Sorkkila et al. (2016) recently found that already at the beginning of upper secondary school 30,7 % of student-athletes showed symptoms of sport burnout and 9,6 % showed symptoms of school burnout.

In Finland student-athletes have four options to choose in the secondary educational level. They can apply to sports high school, to high school which specialises in sports, to a vocational school suitable for athletes or to a normal high school. Even though the Finnish school system makes an effort to help elite athletes to build a successful dual career, it still faces challenges (Metsä-Tokila, 2001). For example, in a study concerning dual career challenges across cultures in 9 countries, limited time was the biggest problem among Finnish student-athletes (Yrjölä, 2011). Therefore, it is essential to create new solutions to support elite athletes to successfully combine sport and education.

Task values and future expectations

According to the Eccles' Expectancy-Value model (Eccles et al., 1983; Eccles & Wigfield, 2002), students' achievement and achievement related choices are determined by two factors: expectancies for success and subjective task- or activity-related values, which are assumed to directly influence performance, persistence and task choice. Expectancies refer to individuals' beliefs about how well they will do on upcoming tasks. Task- or activity-related values, in turn, refer to the value, or importance, an individual attaches to a specific option. According to the model there are three different components which affect the value of a specific task or activity. *Attainment value* refers to the importance of satisfying personal needs and operating according to one's self-image. *Intrinsic or interest value* refers to the simple enjoyment one gets from engaging in an activity. *Utility value* refers to the short or long term importance and usefulness of a specific task.

In previous studies, students' task values in school have been found to contribute to their educational expectations and plans (Eccles, 2005). For example, Viljaranta et al. (2009) examined task values of Finnish adolescents in upper secondary school and found that both boys' and girls' high academic task values were related to high occupational aspirations. High motivation in school has also been associated with high academic performance (Bong,

2001; Murphy & Alexander, 2000; Viljaranta, 2010). For example, in a study by Bong (2001), college students' task values predicted their midterm scores and also future course enrolments. Moreover, in a study by Berndt and Miller (1990) seventh graders' task values were positively related to achievement.

There are some studies on task values among athletes. It has been shown, for example, that high athletic values are positively related with athletes' expectancy-related beliefs (Chin, Khoo, & Low, 2009), sport participation and general perception of one's ability (Eccles, Barber, & Jozefowicz, 1999; Eccles & Harold, 1991). The limitation of previous research carried out among athletes is, however, that the studies have focused on athletic values and less is known about the athletes' school-related task values. In one recent study on European student-athletes' motivation for dual career, university-level athletes were shown to have a high motivation for both school and sports (Lupo et al., 2015). It is possible, however, that student-athletes having difficulties in successfully integrating their athletic career with education have not even been able to enter a university in the student-athlete role. Consequently, simultaneous information about athletes' task values on both athletic and academic domains during upper secondary school would be important in order to find out diversities in the motivational patterns during this important transition stage.

The purpose of the current study is to examine motivation in terms of the Expectancy-Value model (Eccles et al., 1983) for both school and sport among upper secondary school student-athletes. The first aim of the study was to explore what kinds of task value combinations student-athletes show for academic and athletic tasks at the beginning of their upper secondary school. It was also investigated, in line with the Expectancy-Value model, to which extent these patterns of task values are related with future expectations concerning sport and education.

In the present study, a person-oriented approach was used to identify the task-value patterns typical for student athletes. Person-oriented research focuses on individuals or coherent groups of individuals and their behavioural patterns in contrast to a variable-oriented approach which focuses rather on the relations between variables (von Eye, Bogat, & Rhodes, 2006). In previous literature, the person-oriented approach has been used, for example, to group adolescents based on their values in school (Viljaranta et al., 2009), to group competitive athletes of different age based on their motivational level for sport (Gillet, Berjot, Vallerand, Amoura & Rosnet, 2012) and to group primary school students based on their motivational patterns in math, reading and writing (Nurmi & Aunola, 2005; Viljaranta, Aunola & Hirvonen, 2016). According to Nurmi and Aunola (2005) a person oriented approach on task motivation provides the opportunity to form groups of individuals with similar patterns and also examine the proportions of these different groups.

The role of background variables

There is research evidence suggesting that the patterns of task values athletes show may be influenced by various individual characteristics or background variables. One this kind of variable is, for example, gender. In previous studies, gender differences in task values have been found both for school and sport. In general, girls seem to place more value on languages and boys on math (Eccles et al., 1983; Eccles & Harold, 1991; Meece, Glienke, & Burg, 2006; Viljaranta et al., 2009). Past research has also shown that boys rate sports in general as more enjoyable, useful and important than girls. Boys also participate in sports more often, and have a more positive assessment of their general athletic ability (Eccles & Harold, 1991; Fredricks & Eccles, 2005). These previous studies have been conducted among fairly young school-children and therefore the reported gender differences may not generalise to athletes competing at a higher level. The results of the few studies examining task values on the elite sport level have been somewhat contradictory. When examining task values among

basketball players in upper secondary school, Cox and Whaley (2004) found no gender differences in sport values which suggests that at this level females can have as much interest, place as much importance and perceive sport as useful as males. In another study, Chin et al. (2009) found significant gender differences between track and field athletes in the under 15 and 18 year groups: boys placed more value on sports and also had higher expectancy-related beliefs than girls in both age groups.

Besides gender, students' level of academic performance has been shown to be related to task values. For example, upper secondary school performance in terms of GPA has been related to higher task values for school and higher educational expectations (e.g., Berndt & Miller, 1990; Viljaranta et al., 2009). In turn, lack of motivation in terms of low interest and utility values have been related with poor school performance and future course enrolments (Bong, 2001). In longitudinal studies, task values and school performance have been shown to form the reciprocal relationship: high task values predict subsequent high performance, and in turn high performance predicts subsequent high task values (e.g., Viljaranta, 2010).

The association between athletic status/level and academic success is not clear. In a study by Airas (2014), the university students' progress in studies was not affected by their athletic level. In another study of Finnish student-athletes, Lämsä et al. (2014) reported that Olympic level students progressed significantly slower in their studies compared to those who were competing in the regional level. Since both studies focused on student-athletes in tertiary education, there are important contextual differences between the past studies of university student-athletes and the present study of adolescent student-athletes. University student-athletes are likely to have transitioned from junior to senior level of athletic competition (see Fig 1), which is a transition known for its very high dropout rate (approximately 70%; Bussmann & Alfermann, 1994). It is possible, therefore, that those athletes who had the most challenge with integrating sport and education into a dual career pathway might have already

dropped out from school (and have not even gone to higher education). Also, there is a larger variation in athletic status/level among students in upper secondary school in comparison to university. As already noted, university student-athletes are likely to compete at the senior level while adolescents in the present study reported competing in the regional junior up to the international senior levels.

Finally, the type of sport, in terms of team vs. individual sports, can play a role in athletes' task values. According to study by Tauer & Harackiewicz (2004), young athletes aged 12 enjoyed playing basketball more when they were competing against each other in teams (vs. competing alone shooting a basket). The study suggested that children might find team sports more enjoyable than competing alone or just playing without competition. Moreover, in another study by McCarthy et al. (2008), students (aged 8-15) participating in team sports reported greater enjoyment than individual sport participants. However, participation in individual sports has been associated with higher academic performance. For example, in a study by Öhrnberg and Kokkonen (2013), Finnish upper secondary sport school students' GPA was higher among the individual sport participants. Yet, Lupo et al. (2012) found that Italian and Slovenian team sport athletes had higher motivation for school than those doing individual sports. To complicate things further, no difference emerged for type of sport when student athletic motivation, academic motivation and athletic career motivation were examined in a wider cultural context (Lupo et al., 2015).

The final aim of the present study was to examine the role of gender, GPA, current athletic status and type of sport in the patterns of task values student-athletes show at the beginning of upper secondary school.

Aims of the study

The present study examined the following research questions:

1. What kinds of patterns of task values do student-athletes show at the beginning of their

upper secondary school? How big a proportion of athletes show a particular pattern of task values?

2. How do the patterns of task values relate to athletes' sport and educational future expectations?

3. How do background variables, such as gender, type of sport, GPA and current athletic status, associate with students' task value patterns?

Method

Participants

Ethical approval was obtained from the relevant university ethics committee before participant recruitment. All participants gave written informed consent prior to participation in the study. Full details of the Adolescent Dual Career study methodology and measures have been published elsewhere (Ryba et al., 2016), so here the focus is on the aspects relevant to this study. The sample consisted of 391 (51 % females) student-athletes from six different upper secondary sport schools in Finland. Adolescents filled out a self-report questionnaire during their school time at the beginning of their upper secondary school (Time 1). Most of the students (58 %) filled out an online questionnaire via MrInterview software but due to technical difficulties and facility problems a significant part of the students had to fill out paper questionnaires.

Measures

Athletic task values. Participants' task values in sport were examined by asking them to rate 13 questions measuring interest (5 items; e.g., *How much do you like doing your sport?*), utility (4 items; e.g., *How useful or necessary doing your sport is for your future plans?*) and attainment (4 items; e.g., *How important is it for you to do well in sport competitions?*) values concerning different sport-related domains, such as sports in general, sport practices,

and sport competitions/games, on a 5-point scale (1 = *not at all*; 5 = *extremely much*). The Cronbach alpha reliabilities for the three task value subscales were .77, .81, .80, respectively.

Academic task values. Participants' task values in school were examined by asking them to rate 18 questions measuring interest (6 items; e.g., *How much do you like math?*), utility (6 items; e.g., *How useful or necessary is learning math for your future plans?*) and attainment (6 items; e.g., *How important is it for you to get good grades in math?*) values on a 5 –point scale (1 = not at all; 5 = extremely much). The questions concerned math, foreign language and theoretical subjects. The Cronbach alpha reliabilities for the three task value subscales were .72, .72, .85, respectively.

Athletic expectations. Adolescents' athletic expectations were examined by asking them to state the highest level in which they expect to compete in their athletic career. There were 16 options, the highest being “Olympic Games” (26.1 %) and the lowest ‘I have no expectations’ (2.6 %).

Educational expectations. Educational expectations were examined by asking students to state the highest education that they plan to complete by choosing one option from a range from “Undergraduate” (3.6 %) to “University, doctorate degree” (9.5 %). In the analyses, the option ‘I don't know’ (36.1 %) was coded as missing values.

Current athletic status. Adolescents' current athletic status was examined by asking their participation and success in 15 different sport competitions they had participated in during the last year and whether they had placed within the top eight or three. There were 15 different competition options, the highest being “Olympic Games” and the lowest “regional competitions/games”. For the analyses students' athletic status was divided into 5 levels: (0) have not competed (2.3 %), (1) regional level (6.1 %), (2) national level (44.2 %), (3) European level (37.9 %) and (4) International level (8.7 %).

Type of sport. Adolescents were asked to report their type of sport in the questionnaire. In the analyses the types of sports were divided into team sports (50 %) and individual sports (50 %).

GPA. Participant's grade point average (GPA) was measured by asking them to report their latest GPA. Adolescents filled out the questionnaire at the beginning of their upper secondary school so their self-reported GPA was from the end of comprehensive school. From the possible range 4 to 10, the participants' GPA was on average 8.85 ($SD = 0.62$; $Range = 7.25-10$).

Analysis Strategy

The analyses were carried out along the following steps. First, to examine what kinds of patterns of task values concerning sport and school domains student-athletes show at the beginning of their upper secondary school, a latent profile analysis was carried out. For this, the criterion variables, i.e. interest, utility and attainment values for sport and school were standardized and the outliers were handled by forcing them within the range -3 to 3. The number of latent profiles was selected according to the following four criteria: (1) model fit; (2) distinguishability of the latent groups; (3) latent class sizes and (4) theoretical justification. The fit of the model was evaluated according to the following criteria: (a) the Bayesian Information Criterion (BIC); (b) the adjusted Bayesian Information Criterion (aBIC); (c) the Akaike's Information Criterion (AIC); (d) Vuong-Lo-Mendell-Rubin Likelihood Ratio Test (VLMR) and (e) Bootstrapped Likelihood Ratio Test (BLRT). Lower information criterion values indicate a better model of fit and significant test results in VLMR and BLRT indicate that the higher solution is better. The distinguishability of the latent classes was evaluated with Entropy, where values closer to 1 indicate higher precision on class solution.

Second, to examine how the found task-value patterns would be associated with athletes' expectations regarding their future sport and education, differences in future expectations depending on task value pattern typical for the athlete were examined. Third, the role of different background variables, that is, gender, type of sport (individual vs team sport), GPA and current athletic status, in students' patterns of task values was investigated by predicting the likelihood to show a certain kind of task value pattern with these variables by means of multinomial logistic regression. All analyses were carried out using the Mplus program (version 7.00; Muthén & Muthén, 1998–2015). Assuming missingness at random (MAR), the parameters of the models were estimated using the full-information maximum likelihood estimation with standard errors that are robust against nonnormal distributions (Muthén & Muthén, 1998-2015).

Results

Task-Value Patterns

The goodness-of-fit indices for the LPAs of student-athletes' values for sport and school suggested that a three or four class solution was the best (see Table 1). The four-class solution had smaller BIC, aBIC and AIC than the three-group solution, but the difference was small. Entropy value was good on both solutions, but group sizes were more reasonable in the three-class solution than in the four-class solution. Also, the VLMR test suggested that a three-class solution was better than the four-class solution. Consequently, the three-class solution was selected as final solution.

Table 1

Model Fit Indices and Class Frequencies for Latent Profile Analyses with Different Numbers of Latent Subtypes for Student-Athletes' Task Values in Sport and School

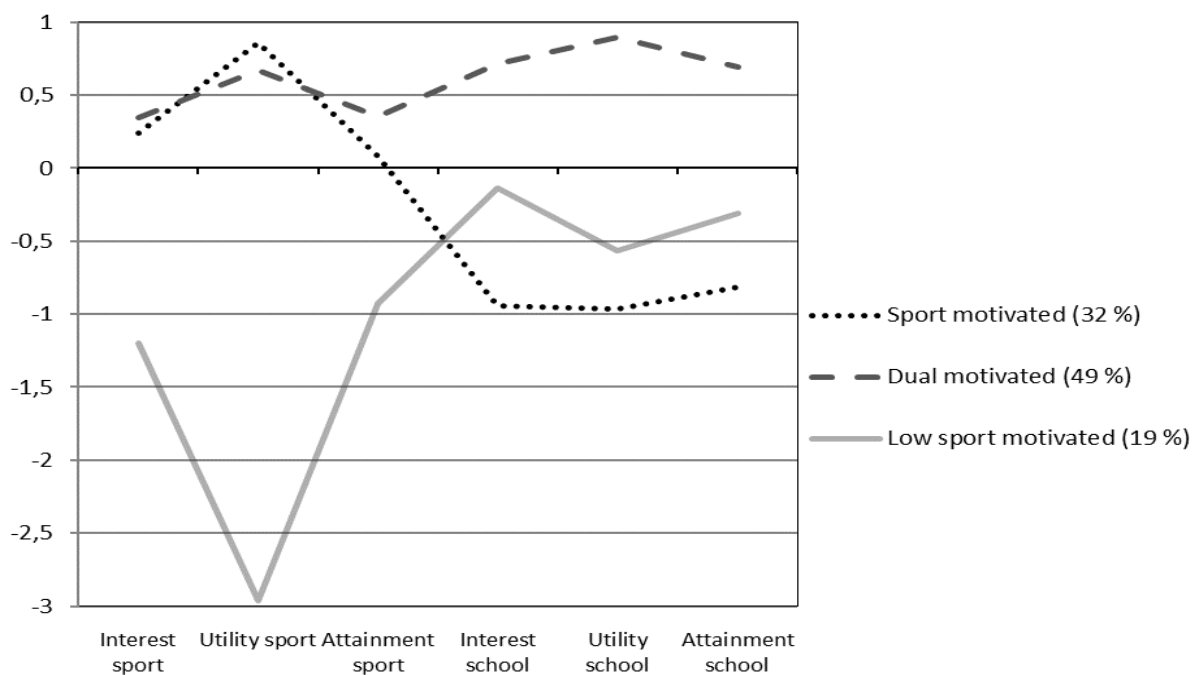
| No. of Groups | BIC | aBIC | AIC | Entropy | p-Value of VLMR | p-Value of BLRT | No. of est. para- meters |
|--|-----------------|-----------------|-----------------|--------------|-----------------------|-----------------------|-----------------------------------|
| 1 (N = 391) | 6616.083 | 6578.008 | 6568.459 | - | - | - | 12 |
| 2 (n ₁ =78, n ₂ =313) | 6328.027 | 6267.741 | 6252.621 | 0.919 | <.0001 | <.0001 | 19 |
| 3 (n₁=125, n₂=190, n₃=76) | 6151.858 | 6069.362 | 6048.672 | 0.801 | <.0001 | <.0001 | 26 |
| 4 (n ₁ =180, n ₂ =131, n ₃ =61, n ₄ =19) | 6127.903 | 6023.195 | 5996.935 | 0.826 | 0.4905 | <.0001 | 33 |

The first pattern of task values (see Table 2 and Figure 2) was characterized by relatively high values for sport but low values for school. Typical for this pattern was especially high utility value in sport. This pattern was most typical for 32% of athletes and was labelled “Sport motivated”. The second pattern was characterized by placing high value on both sport and school. This pattern was typical for 49% of athletes and was labelled “Dual motivated”. The third pattern was characterized by low values in both settings, especially in sport. The pattern was typical for 19% of athletes and was labelled “Low sport motivated”.

Table 2

Standardized Means (M) and Standard Deviations (SD) of Task Values for the Three Task-Value Patterns

| | Task-Value Patterns | | |
|---------------------------|------------------------------|-----------------------------|------------------------------------|
| | Sport motivated (n = 125) | Dual motivated (n = 190) | Low sport motivated (n = 76) |
| Interest value / sport | | | |
| <i>M</i> | 0.240 | 0.346 | -1.196 |
| <i>SD</i> | 0.190 | 0.094 | 0.187 |
| Utility value / sport | | | |
| <i>M</i> | 0.859 | 0.673 | -2.965 |
| <i>SD</i> | 0.107 | 0.109 | 0.228 |
| Attainment value / sport | | | |
| <i>M</i> | 0.083 | 0.354 | -0.928 |
| <i>SD</i> | 0.106 | 0.097 | 0.143 |
| Interest value / school | | | |
| <i>M</i> | -0.945 | 0.712 | - 0.139 |
| <i>SD</i> | 0.157 | 0.163 | 0.142 |
| Utility value / school | | | |
| <i>M</i> | -0.968 | 0.896 | - 0.565 |
| <i>SD</i> | 0.235 | 0.132 | 0.145 |
| Attainment value / school | | | |
| <i>M</i> | -0.813 | 0.691 | - 0.310 |
| <i>SD</i> | 0.171 | 0.141 | 0.132 |

**Figure 2.** Student-athletes' Task-Value Patterns

The Associations between Task-Value Patterns and Future Expectations

Next, to examine how the found task-value patterns would be associated with athletes' expectations regarding their future sport and education, differences in expectations based on the task-value pattern typical for the athlete were examined. The results are shown in Table 3. The results showed that student-athletes characterized by "Sport motivated" or "Dual motivated" motivational pattern reported higher future expectations in sport than those showing "Low sport motivated" pattern. Moreover, student-athletes showing "Dual motivated" pattern reported higher future expectations in school than those showing "Sport motivated" or "Low sport motivated" pattern, and student-athletes showing "Sport motivated" pattern reported lower future expectations in school than those showing "Low sport motivated" pattern.

Table 3

The Associations of Student-Athletes' Task-Value Patterns and Future Expectations

| Pattern | Sport expectations | | | | School expectations | | | |
|---|--------------------|------|----------|-------------|---------------------|------|----------|-------------|
| | Mean | S.E. | χ^2 | <i>p</i> | Mean | S.E. | χ^2 | <i>p</i> |
| Sport motivated | 11.749 | .432 | | | 2.547 | .122 | | |
| Low sport motivated | 9.624 | .552 | | | 2.861 | .080 | | |
| Dual motivated | 11.833 | .340 | | | 3.081 | .058 | | |
| Sport motivated vs. Low sport motivated | | | 8.921 | .003 | | | 4.560 | .033 |
| Sport motivated vs. Dual motivated | | | 0.021 | .884 | | | 14.020 | .000 |
| Low sport motivated vs. Dual motivated | | | 11.391 | .001 | | | 4.954 | .026 |

The role of background variables

As a final research question the role of background variables in task-value patterns was examined. First, each background variable under interest was examined separately by

predicting the class membership with the particular background variable. The results showed that gender, type of sport and GPA had a significant effect, but the student-athletes' current athletic status was not significant. Girls were more likely to show "Dual motivated" pattern than the "Sport motivated" pattern ($estimate = -.755, p = .007$). Moreover, the higher the GPA of the student, the more likely she/he showed a "Dual motivated" pattern than "Sport motivated" ($estimate = 2.252, p = .000$) or "Low sport motivated" pattern ($estimate = 1.081, p = .001$) and the lower the GPA, the more likely the student showed "Sport motivated" pattern than "Low sport motivated" pattern ($estimate = -1.170, p = .002$). Finally, the results showed that student-athletes doing team sports were more likely to show "Sport motivated" pattern instead of "Low sport motivated" pattern ($estimate = .84, p = .012$).

Second, the effects of the statistically significant background variables were examined simultaneously. The results showed, first, that the effect of GPA and type of sport were still significant, when controlling for the other variables, but gender had no longer a significant effect and for this reason was left out from the final analysis. The final results showed (see Table 4) that GPA predicted membership between all patterns; the higher the GPA, the more likely the student showed "Dual motivated" pattern than "Sport motivated" or "Low sport motivated" pattern and the lower the GPA, the more likely student showed "Sport motivated" than "Low sport motivated" pattern. Type of sport predicted membership between "Sport motivated" and "Low sport motivated" patterns; student-athletes doing team sports were more likely to show "Sport motivated" pattern.

Table 4*Background Variables as Predictors of Class Probability*

| Pattern | GPA | | | Sport type (individual = 1, team sport = 2) | | |
|-------------------------|--------|------|-------------|--|------|-------------|
| | Est. | S.E. | <i>p</i> | Est. | S.E. | <i>p</i> |
| Sport motivated | | | | | | |
| vs. Dual motivated | 2.253 | .309 | .000 | -0.207 | .335 | .536 |
| vs. Low sport motivated | 1.153 | .379 | .002 | -0.774 | .353 | .028 |
| Dual motivated | | | | | | |
| vs. Low sport motivated | -1.100 | .332 | .001 | -0.567 | .315 | .071 |

Discussion

This was the first study to examine student-athletes' task values and future expectations in two domains, sport and school, simultaneously. The latent profile analysis identified three different task value patterns: "Sport motivated" (32 %), "Dual Motivated" (49 %) and "Low sport motivated" (19 %). Overall, these results suggest that almost half of the student-athletes at the beginning of upper secondary school value both sport and school highly. On the other hand, over third of the students valued only sport and almost fifth of the students did not place high value on either sport or school. The results showed further that student-athletes showing "Dual motivated" pattern had higher academic future expectations than others, whereas those showing "Sport motivated" pattern had higher athletic future expectations than others.

The first research question of the study was what kinds of task-value patterns student-athletes show at the beginning of high school. Three different task-value patterns were identified, "Dual motivated" pattern being most common and "Low sport motivated" pattern least common. The fact that "Dual motivated" pattern was most common is encouraging suggesting that almost half of the student-athletes were motivated in both domains and appear to be pursuing both academic and athletic careers. The high amount of students showing

motivation for dual career is in line with a recent result, where Lupo et al. (2015) found that tertiary level European student-athletes showed high motivation for both sport and education. However, the present study differs from the latter study by giving a person not a variable oriented focus. By using this approach to dual career motivation, differences between individuals were found.

The result that over a third of the student-athletes did not value school, in turn, was surprising taken into account that student-athletes in the present study had chosen themselves to pursue an academic track in upper secondary school. The result of the present study raises a question what could be the reasons of going to a sport upper secondary school, when not being highly motivated in school. One reason might be that in Finland many sport upper secondary schools have good training facilities and skilled coaches, which makes it easy to train at a high level. In fact, in a study by Karvonen and Suomela (1996) students were disappointed in the training possibilities and in the level of coaching after upper secondary school. Also, maybe in the beginning of upper secondary school, some students aren't aware of the increasing difficulties in their future studies. It is also possible that because secondary level education is common in Finland and high education is appreciated in the job market, adolescents select this option even in the cases when not highly motivated on academic education. Overall, the result suggests that there is a large amount of students who would benefit from career guidance and counselling to design a successful dual career pathway.

On the other hand, the fact that 19 % of student-athletes showed low values on both school and sport raises a question why have those, who are not highly motivated in either domain, even applied to an upper secondary sport school. It is notable that this motivational pattern was characterised by an extremely low utility value for sport, which means that these student-athletes did not perceive sports as useful to their future. One possible explanation for the found pattern is that sport may only be a habit or a leisure time activity with friends, and

there is no genuine desire to become a high performance athlete. For example, Jõesaar et al. (2011) found that peer groups have an influence on motivation for sport and also are related to persistence in sport. Also, some student-athletes in sport high schools just might not be motivated enough to put as much effort into sports as needed in order to become a professional athlete (Metsä-Tokila, 2001). Motivation has been shown to predict drop out both from sport and school (e.g., Jõesaar et al., 2011; Sarrazin et al., 2002; Vallerand et al., 1997). Also, upper secondary school is a transition point where standards both in sport and in school become higher, which in turn increases the challenge to succeed in both. It might thus be assumed that the motivational patterns characterized by low task values on education or sport increase the risk of drop out. Those who are motivated only in sports, might dropout from school, and those who are motivated in neither domain, might dropout from both. It is clear that student-athletes might need help already in the beginning of upper secondary school in order to have a successful dual career. For this reason, it is of high interest to create ways to help student-athletes at this critical point.

The second research question of the present study was how are athletes' sport and educational future expectations related to the found task-value patterns. The results showed that student-athletes' task-value patterns were associated with their future expectations both in sport and education, similarly to previous studies where high academic values have been related with, for example, high occupational aspirations (Viljaranta et. al, 2009). In the present study high value on one domain was associated with high future expectations in the same domain. This result goes in line with previous studies where for example, girls who valued math highly were more likely to strive to science and math careers (Eccles et al., 1999). Student-athletes characterized by "Sport motivated" or "Dual motivated" patterns reported higher future expectations in sport than those showing "Low sport motivated" pattern. On the other hand, student-athletes showing "Dual motivated" pattern reported

higher future expectations in school than those showing “Sport motivated” or “Low sport motivated” pattern and student-athletes showing “Sport motivated” pattern reported lower future expectations in school than those showing “Low sport motivated” pattern. Based on this result, student-athletes’ values even at the beginning of upper secondary school are associated with their future expectations, which in turn might have consequences for later decisions in life (e.g., course enrolments, educational plans, persistence in sport/school.)

In the present study GPA and type of sport were significant predictors of the motivational patterns typical for student-athletes. High GPA was associated with higher values in school and lower GPA with lower values in school. This is in line with previous studies where task values have been shown to be positively related to academic performance level (e.g., Berndt & Miller, 1990).

Gender differences emerged in the task-value patterns. Girls were more likely to show “Dual motivated” than “Sport motivated” pattern. However, after controlling for GPA, the other significant variable between these patterns, gender had no longer a significant effect. Overall, this result suggests that although there were some gender differences between “Dual motivated” and “Sport motivated” patterns, these results are due to differences in GPA. This result is contradictory to several previous studies in the non-athlete domain, where both in sport and school domains gender differences were evident (e.g., Eccles & Harold, 1991; Viljaranta, 2009). Also, in a study with athletes by Chin et al. (2009) gender differences emerged as boys valued sports more than girls. However, the present result is in accordance with earlier findings among elite athlete domain where no gender difference was found in the student academic motivation, athletic motivation, and athletic career motivation (Lupo et al., 2015), and where no gender difference was found in student-athletes’ task values for sport (Cox & Whaley, 2004). For future studies more attention should be focused on student-

athletes' gender differences in both domains in order to understand more clearly the role of gender in a successful dual career.

Type of sport predicted membership between “Sport motivated” and “Low sport motivated” patterns. Team sport athletes were more likely to show “Sport motivated” pattern. This result suggests that student-athletes who are in team sports generally value sports more highly than those who are in individual sports. This result is in line with previous findings where team sport student-athletes reported greater enjoyment than individual sport participants (McCarthy et al., 2008) and where children enjoyed sports more when they were competing in teams (Tauer & Harackiewicz, 2004). The present result might be also explained by early professionalization of high revenue sports, such as ice hockey, which is one of few sports in Finland where it is possible to earn a living from sport. Consequently, some team sports athlete might have a high utilitarian value for their sport because they might hope to become a professional athlete and reason that education is not necessary for them. However, the probability of advancing to professional ranks is low. For example, Karvonen and Suomela (1996) found that only 5% of Finnish students became full time athletes after graduating from sport upper secondary school. This result has some implications for practitioners dealing with student-athletes who are facing problems with school motivation.

The novel findings of the present study should be interpreted within the understanding of its limitations. The first limitation is that the analyses used cross-sectional data. Because of this it is difficult to make causal inference. It is of high importance to have a longitudinal study within this subject to see how the student-athletes' task-value patterns might change over the upcoming years of upper secondary school. The second limitation is the high amount of “I don't know” answers when student-athletes were asked about their educational future expectations. Because of this, the sample size in the analyses concerning future expectations in education was smaller than would be ideal. Finally, the study was carried out in a

particular cultural environment. Because the pattern of results can be different in different cultural settings, future cross-cultural studies are needed to find out the similarities and differences in motivational patterns between countries.

Overall, the results of the present study increase our knowledge and understanding of student-athletes' task values and future expectations in two different domains, sport and school. These findings may be beneficial when trying to create a strategy to help elite or talented student-athletes succeed both in school and sport. The present study suggests that about half of the student-athletes starting upper secondary school might need some support from, for example schools, coaches, parents and peers in order to have a successful dual career. Guidance in career planning is needed so that the students are able to find out an educational path that motivates them the most. It is important to help students to take a look further into the future. Their current choices have consequences, which increases the importance of finding the most profitable pathway for one's future.

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