

Student-athletes' beliefs about athletic ability

A longitudinal and mixed method gender study

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Abstract

The overall aim of this paper is to study and discuss student-athletes' beliefs about athletic ability. Specifically, the aim is to analyze and problematize athletic ability longitudinally and with a gender perspective as it is perceived, discussed, and valued by student-athletes. A three-year and six-wave study was conducted on 78 student-athletes (30 females and 48 males; M_{age} at $T_1 = 12.7$, $SD = 0.44$) attending a compulsory school with a sport profile. Additionally, semi-structured interviews were conducted with 27 of the student-athletes (16 female and 11 male) during their second and third school year. Based on a parallel mixed-data analysis with cross-talks and meta-inferences, the two main results of this study are as follows: (1) entity beliefs increase and incremental beliefs decrease during the three-year period, and (2) gender add a further understanding of the student-athletes' beliefs about athletic ability.

The findings are discussed in terms of their implications for the potential influence of the socialization processes on beliefs of athletic ability, and suggestions for future research are provided.

Keywords: adolescents, athletic ability, gender, mixed-method, school sport, student-athlete

Young people who engage in competitive sports in Sweden most often do so in organized sports clubs during their leisure time (Swedish Sports Federation, 2018). However, an increasingly popular way to engage in formalized sport is during school hours, that is, in school sport. Many who choose school sport also participate in club sports (Ferry & Lund, 2018). It is relevant to study student-athletes' beliefs about athletic ability since it is related to behavioral, cognitive, and affective outcomes of sports performance, for example, athletic engagement, perception of competence, morality, and stereotyping (Biddle, Wang, Chatzisarantis, & Spray, 2003; Gardner, Vella, & Magee, 2017). The overall aim of this study is to investigate student-athletes' beliefs about athletic ability. A specific aim is to analyze and problematize athletic ability longitudinally and with a gender perspective as it is perceived, discussed, and valued by student-athletes. The research focuses on student-athletes admitted to a sports school where they train and develop in sports on a daily basis. In addition, they train and compete in clubs during their leisure time. How do the student-athletes talk about athletic ability? Are young student-athletes' beliefs about athletic ability fixed over time, or do they change? If beliefs do change, how, and to what extent?

Analytical Framework: Athletic Ability and Gender

Dweck and colleagues have proposed a theoretical framework regarding individual differences centered on beliefs concerning ability or other human attributes (Dweck, 2000; Dweck & Legget, 1988; Dweck, Chiu, & Hong, 1995). Initially, this framework was used in the area of intelligence; more recently it has included views on morality, stereotyping, and athletic ability (Biddle et al., 2003; Dweck, 2000; Dweck et al., 1995; Dweck & Legget, 1988; Vella, Braithewaite, Gardner, & Spray, 2016). People who have an *incremental view* of ability (those who believe ability is malleable, increasable, and controllable) tend to assume that their ability can be changed through practice and effort. People who have an *entity view* of ability (those who believe ability to be fixed, unchangeable, and uncontrollable) tend to focus on normative comparisons. Previous research in the physical activity domain (e.g., Biddle et al., 2003; Wang & Biddle, 2003), and in team sports (e.g., Stenling, Hassmén, & Holmström, 2014), have supported this notion. According to Dweck et al. (1995), people can hold both incremental and entity views of ability;

however, one may be more dominant and have a stronger link to allied structures in achievement motivation theories, for example, achievement goals. Moreover, the entity and incremental beliefs can be domain-specific. Beliefs in the domain of intelligence, for example, may be unrelated to those concerning moral behavior or athletic ability.

In a sample of college students, Robin and Pals (2002) found that the college experience did not seem to produce a normative mean-level change in the implicit beliefs regarding intelligence. Moreover, using a longitudinal design, Warburton and Spray (2009) determined that strong entity beliefs over time increased young students' performance-oriented goals in activities in physical education, such as focusing on both normative competence and avoiding normative incompetence. However, to our knowledge, no study has investigated if and how beliefs about athletic ability change over time. This topic is especially interesting in youth sport because children and young adolescents may be more susceptible to the influence of situational variables – such as parents, peers, and coaches – than older adolescents and adults (Roberts & Treasure, 1992; Wylleman, Rosier, & De Knop, 2016).

Previous research on gender differences regarding implicit beliefs about athletic ability in sports has been inconsistent (Vella et al., 2016). For example, among English secondary-school students, males reported higher levels of incremental beliefs than females, while no gender differences were found for entity beliefs (Wang, Chatzisarantis, Spray, & Biddle, 2002). In contrast, in a sample of Norwegian junior high school students, boys reported higher levels of entity beliefs compared to girls (Ommundsen, 2001). These studies suggest that gender differences may exist as related to beliefs of athletic ability in sport, and may also be related to beliefs of athletic ability concerning other variables, such as motivation (Lintunen, Valkonen, Leskinen, & Biddle, 1999) and anxiety (Stenling et al., 2014). However, these studies have focused mainly on gender, as male and female, and its effect on outcome variables without discussing the power and hierarchy that underlie the social construction of gender (Lorber, 1994; McDonagh & Pappano, 2008).

Historically, boys and men have been (and are) presumed to be inherently stronger, faster, and more aggressive than girls and women. Thus, males are presumed to be better athletes, because being faster, stronger, and more aggressive are elements connected to successful performance. This prevailing assumption makes for an evaluative categorization. It affects how male and female athletes are perceived in contemporary sports

regarding the expectations of skills: what kind of athletic skills are desirable, and not desirable; ability; ambition; and opportunities to be successful in sport (Hargreaves, 1994; McDonagh & Pappano, 2008; Messner, 2002; Young, 2005). Among others, Anderson (2009), Andreasson (2007), Fundberg (2003), and Messner (2002) depict how sports have been and are used as an instrument to socialize and foster boys and men into a certain kind of man.

Consequently, certain bodily traits and skills have been, and still are, associated with men and with (heterosexual) masculinity. Studies show that boys are expected to be inherently skilled in sports (Anderson, 2009; Larneby, 2016; Messner, 2002). Girls and women have fought (and still fight) to gain access to most sports and to *do* sports in the same ways as boys and men. Males are expected to run fast and/or long, exert themselves, build muscles, fight for the team, and so on, in educational and organized club sport settings. Although female athletes, in general, are perceived as inferior to males, they have successively gained more recognition within society and the world of sports (Hargreaves, 1994; McDonagh & Pappano, 2008; Messner, 2002). Studies show that female athletes report being empowered by doing sports. Simultaneously, female athletes need to perform at a high level to be recognized as athletes and not just as females doing sport, especially in sex-integrated sport settings (DiCarlo, 2016; Fink, LaVoi & Newhall, 2016; Larneby, 2016; Priyadharshini & Pressland, 2016). McDonagh and Pappano (2008) and Messner (2002) argue that as long as female athletes are perceived as inferior versions of male athletes, they will, at the group level, never gain full or equal recognition. While successful male athletes in many sports, often traditionally masculine, can make a living out of sport, female athletes believe their opportunities are more restricted because male sport is valued higher (McDonagh & Pappano, 2008; Hellborg, 2019; Melkersson, 2017; Messner, 2002). It is apparent that male and female athletes are dichotomized and valued differently in sports.

This mixed method study will address student-athletes' beliefs about athletic ability. The specific aim of the quantitative part of this study is to examine developmental trajectories (i.e., levels and changes) of student-athletes' implicit beliefs about athletic ability. Because of the lack of research investigating if and how beliefs about athletic ability change over time, we, in line with contemporary theoretical reasoning, make a nondirectional hypothesis that (*H1*) the student-athletes' incremental and entity beliefs would change over the three years. The specific aim of

the qualitative part of this study is to analyze and problematize athletic ability as it is perceived, discussed, and valued by student-athletes. Can gender constructions be identified in their narratives of athletic ability, and if so, how is this expressed?

Methods

Participant

The participants in the quantitative part of the study were a cohort ($N = 78$, 30 females and 48 males, Mage at T1 = 12.7, $SD = 0.44$) attending a sports school. The sports represented by the participants were football (soccer), ice hockey, figure skating, floorball, swimming, diving, basketball, gymnastics, badminton, and tennis. For the qualitative part, all 78 student-athletes were observed; in addition, 27 student-athletes volunteered to be interviewed (16 females and 11 males, representing football, tennis, floorball, basketball, and ice-hockey). The school in question has a regional uptake from seventh grade, and its students are admitted based on actual skills in their specific sports. The school offers the same educational content as other compulsory schools in Sweden; the major difference is the daily sports training included in the students' schedules. In addition to regular physical education (PE), the students in this cohort have ninety minutes of sport-specific training four days a week during school hours. The training hours are included in both elective and physical education classes. Moreover, the students also participate in organized sport during their leisure time.

Procedures

The student-athletes filled out the surveys at the beginning of seventh grade (baseline), and at 4 months, 8 months, 16 months (middle of eighth grade), 24 months, and 32 months (end of ninth grade), following the baseline. These surveys were filled out in a classroom setting with the first researcher present, who also read each item in the questionnaires to the student-athletes at the first four data collections. The second researcher's fieldwork was carried out through all three academic years, and the interviews were conducted during the second and third school year. We used the interviews because it is important to give these student-athletes a voice to express their experiences of athletic ability. Two

individual interviews were conducted, one with a female student-athlete; the other with a male student-athlete. The other interviews were group interviews with two to four student-athletes in each group. One group interview consisted of one male and one female who train together in a team sport; the other group interviews consisted of either male or female student-athletes.

Measures

The Swedish version of the Conceptions of the Nature of Athletic Ability Questionnaire-2 (CNAAQ-2, Biddle et al., 2003) was used in the present study to assess the student-athletes' beliefs about athletic ability. The 3-item subscales reflecting Learning (e.g., To be successful in sport, you need to learn techniques and skills, and practice them regularly), and Improvement (e.g., In sport, if you work hard at it, you will always get better) were used to measure the incremental beliefs. The 3-item subscales reflecting Stable (e.g., Even if you try, the level you reach in sport will change very little) and Gift (e.g., You need to have certain gifts to be good at sport) were used to measure the entity beliefs. The responses were given on a 5-point scale ranging from 1 (strongly disagree) to 5 (strongly agree). Previous research has supported the psychometric properties of the instruments (Stenling et al., 2014; Biddle et al., 2003).

Statistical Analysis

Descriptive statistics were calculated using Microsoft Excel 2011 (version 14.7.1). Multilevel modeling (MLM; Heck & Thomas, 2015; Raudenbush & Bryk, 2002; Singer & Willett, 2003) was used to examine growth or changes in student-athletes' implicit beliefs about athletic ability over the three years of the study. Based on our sample size and repeated observations, we believe that this type of analysis is well suited to our endeavor (see Maas & Hox, 2005).

Furthermore, MLM is also useful when observations are missing because it does not assume an equal number of measurement occasions for all individuals (Heck & Thomas, 2015; Singer & Willett, 2003). The observations were collected at unequally-spaced intervals (baseline, 4 months, 8 months, 16 months, 24 months, and 32 months following baseline). Unequal spacing conditions can be flexibly handled using MLM through the adequate specification of the time predictor (Heck &

Thomas, 2015; Singer & Willett, 2003). In this case, we found it advantageous to use the different periods as the slope. As a four-month interval occurred between each of the first three observations, we divided the months of each observation following the baseline by four. This decision created a linear slope of 0, 1, 2, 4, 6, and 8.

Two levels were specified. Level 1 represents the repeated observations, and these repeated measures were nested within student-athletes; therefore, the latter measure constituted Level 2 in the analysis. We estimated the growth or change from the perspective of random-coefficient MLMs with the growth rate included at Level 1. We conducted unconditional MLMs for the beliefs of athletic ability variables across the six time points, where the intercepts represented the student-athletes' overall level at the beginning of seventh grade (first measurement point), and the slopes represented the overall change trajectories across the six time points. The covariance between the intercepts and slopes represented the relationship between the scores at the first measurement point and the rate of change. The data were analyzed using Mplus (version 7.4) with robust maximum likelihood estimator (Muthén & Muthén, 1998-2015). Statistical significance was set at $p < .05$.

Qualitative Analysis

An ethnographic approach was used to conduct qualitative data collection (Creswell & Creswell, 2018). The longitudinal field work that was carried out during the three academic years at the sports school provided a framework from which the interview questions emanated. Each interview was centered around what it is like to train in [the sport] at a sports school. The follow-up questions related to the admission process, the athletes' ambitions within their chosen sport, their experiences in the training groups, and anything else of note that emerged. In analyzing the interviews, expressions and experiences relating to athletic ability, talent, improvement, training hours, and ambition in sport in general – and attending this school in particular – were excerpted and re-read with a gender theoretical lens. This coding procedure served to concentrate the narratives relating to beliefs on ability (Braun & Clarke, 2006).

Judith Lorber's (1994) theoretical concept of *gender as a social institution* implies that gender is a predominant category in society that orders our everyday life. As a social institution, gender creates differences between men and women, though we as humans are similar, beyond our

gender. Significantly, Lorber argues that these differences are perceived as natural and inherent, rather than the result of socialization. Furthermore, the differentiation is based on gender, that is the individuals' respective sex (as in male or female) and the social construction of sex. The meaning related to gender often form a base through which men and women are stratified, thereby valuing the same activity (i.e., sport) differently because of gender, rather than on actual ability (Lorber, 1994). Although some biological differences between males and females do exist (such as strength), which may be more evident in sports than in other situations, Lorber suggests that these are enhanced through the social construction of gender. Further on, the concept "gender" refers to one's biological sex (being male or female), as well as socially constructed differences between males and females. Therefore, this social constructionist perspective is used as an analyzing instrument to interpret and provide an understanding of if, how, and why gender is noticeable in the student-athletes' beliefs of athletic ability.

Parallel Mixed Data Analysis

Using a mixed method design to explore, analyze, and problematize student-athletes' beliefs of athletic ability allows for simultaneous use of quantitative and qualitative data (Creswell & Creswell, 2018). A mixed method design enriches not only the results, but also how they can be used to understand student-athletes' beliefs about athletic ability. Bryman (2016) argues that quantitative and qualitative data should be mutually illuminated to facilitate a mixed methods approach. For this paper, a parallel mixed data analysis (Teddlie & Tashakkori, 2009) is used to bring together two individual (and independent) data collections, questionnaires, and statistical analysis with interviews performed/conducted on the same cohort of student-athletes at a compulsory school with a sports profile. The quantitative data show collective trajectories within the whole group over time. The qualitative data provides an added understanding of student-athletes' beliefs about athletic ability as these individuals put their experiences into context. Following the two different analytical approaches (see Bryman, 2016; Creswell & Creswell, 2018), the results from the statistical analysis and the discussion about these results are presented separately, and, in contrast, the qualitative results and analysis are presented intertwined. Inferences made from each strand, together with "cross-talks" (informal discussion between strands during

analysis) are subsequently integrated to form meta-inferences at the end of the study (Louick, Leider, Daley, Proctor, & Gardner 2016; Teddlie & Tashakkori, 2009). Since various methods and two separate data collections are brought together to achieve a specific aim, it is important to be transparent to provide this joint approach with credibility (Sparkes, 2015).

Results of Statistical Analysis

Table 1 presents the means, standard deviations, and Cronbach alpha coefficients for the two variables about each of the six measurement occasions. A review of the means showed that the incremental beliefs variable decreased over time and that the entity beliefs variable increased over time. The significance of the changes in the means of these variables is examined below via the testing of the unconditional multilevel models for growth.

Table 1. *Summary of Means, Standard Deviations, and Cronbach's Alpha Coefficients for all Beliefs of Athletic Ability Variables*

Variable list	<i>M</i>	<i>SD</i>	α	<i>n</i>
1. Incremental beliefs T1	4.33	.46	.56	77
2. Incremental beliefs T2	4.38	.51	.75	71
2. Incremental beliefs T3	4.26	.52	.63	73
4. Incremental beliefs T4	4.21	.54	.71	71
5. Incremental beliefs T5	4.16	.64	.80	63
6. Incremental beliefs T6	3.86	.77	.84	56
7. Entity beliefs T1	2.31	.58	.58	77
8. Entity beliefs T2	2.45	.62	.62	71
9. Entity beliefs T3	2.36	.64	.63	73
10. Entity beliefs T4	2.45	.71	.70	71
11. Entity beliefs T5	2.62	.83	.83	63
12. Entity beliefs T6	2.68	.78	.78	56

The unstandardized coefficient from the incremental growth model (see Table 2) suggests that the student-athletes' initial level (start of seventh grade) on average was high ($\gamma_{00} = 4.384, p = < .01$). Furthermore, a statistically significant negative slope coefficient ($\gamma_{10} = -.050, p < .01$), indi-

cating that the growth curve for believing that athletic ability is malleable, increasable, and controllable, *decreased* marginally over the six time points. The statistically significant variance in intercept ($\tau_{00} = .094, p < .01$) signifies that there were between-person differences in the participating student-athletes at the beginning of seventh grade. The statistically significant variance in slope ($\tau_{10} = .004, p < .01$) reveals that there was heterogeneity in the sample regarding how the student-athletes in the sample changed over time, meaning that not all individuals grew at the same rate, but that there is significant variability in their growth rates. The covariance ($\tau_{01} = -.002, p > .05$) indicates that there was no association between initial level and slope in incremental beliefs.

The unstandardized coefficient from the entity growth model (see Table 2) suggests that the student-athletes' initial level (start of seventh grade) on average was low ($\gamma_{00} = 2.325, p < .01$). A statistically significant positive slope coefficient ($\gamma_{10} = .047, p < .01$) demonstrates the growth curve of believing athletic ability to be fixed, unchangeable, and uncontrollable *increased* marginally over the six time points. The statistically non-significant variance in slope ($\tau_{10} = .001, p > .05$) indicates that the sample was homogeneous regarding how the student-athletes in the sample changed over time, meaning that all individuals had similar growth rate. The statistically significant variance in intercept ($\tau_{00} = .097, p < .05$) reveals that there were between-person differences in the participating student-athletes at the beginning of seventh grade. The covariance ($\tau_{01} = .010, p > .05$) signifies that there was no association between initial level and slope in entity beliefs.

Discussion of the Statistical Analysis

The specific aim of the quantitative part of the study was to examine the developmental trajectories (i.e., levels and changes) of the implicit beliefs of student-athletes about athletic ability. We hypothesized (*H1*) that the student-athletes' incremental and entity beliefs would change during the three years.

As the statistical results show, the cohort significantly decreased in the measures of incremental beliefs and significantly increased in the measures of entity beliefs. These results support the theoretical assumption (e.g., Dweck et al., 1995) that beliefs of athletic ability can change. Furthermore, these changes tend to move from an incremental belief to an entity belief about athletic ability.

Table 2. *Unstandardized Parameters Estimates of the Beliefs of Athletic Ability Growth Curve Models (N=78)*

	<i>Incremental beliefs</i>			<i>Entity beliefs</i>		
	Estimate	SE	p value	Estimate	SE	p value
<i>Fixed Effects</i>						
Intercept (γ_{00})	4.384	0.047	0.000	2.325	0.054	0.000
Linear slope (γ_{10})	-0.050	0.011	0.000	0.047	0.011	0.000
<i>Random Effects</i>						
Level 2: Athlete						
Intercept variances (τ_{00})	0.094	0.029	0.001	0.097	0.038	0.010
Slope variances (τ_{10})	0.004	0.001	0.001	0.001	0.001	0.369
Covariance (τ_{01})	-0.002	0.005	0.635	0.010	0.006	0.089
Level 1: Measure						
Residual variances (σ^2)	0.177	0.021	0.000	0.291	0.036	0.000
ICC	0.333			0.345		
<i>Goodness-of-fit</i>						
AIC	621.204			784.321		
BIC	645.316			808.433		
Parameters	6			6		
Observations	411/468			411/468		

Note. ICC = Intraclass correlation, AIC = Akaike Information Criteria, BIC = Bayesian Information Criteria

Upon admittance to their school, these student-athletes are considered to be among the best in their age group locally (for some regionally, a few nationally). For the student-athletes, being among the best athletes at an early age does not necessarily emphasize a normative comparison. Being part of the school sport structure, sport is now central in the student-athlete's everyday curriculum, perhaps in a way that made evaluation more salient (see Horn 2004) and competition and comparison between peers more likely (see Marsh, Marin, & Parker, 2015; Marsh et al., 2008). Furthermore, with increased demands for improvement and performance during leisure time, in conjunction with increasing demands in academic achievement to graduate to the upper-secondary school level, this might reinforce or change their beliefs about athletic ability. Such environments could lead to conclusions that individual differences in achievement-related abilities are stable, leading these student-athletes to develop

more entity-like beliefs about their own athletic abilities (Dweck, 2000). If they start having difficulties mastering their tasks, such beliefs could lead in the long run to giving up hope of success.

The above explanations might also be extended to their participation in sports outside of school – they train hard, compete often, are part of selection processes, and many athletes aim to reach a regional and/or national level in their sport. Being competitive, they are exposed to normative comparisons not only in terms of feedback or results but also in terms of various selection systems. In general, normative comparisons and selection are similar for all the student-athletes regardless of sport, and if these types of feedback focus on or judge young athletes' traits or abilities, this environment could foster a fixed mindset or an entity belief about athletic ability (Dweck & Molden, 2017).

If the trend of the growth curve would continue (i.e., increased belief that athletic ability is stable, uncontrollable, and unchangeable) this belief could potentially have consequences for the student-athletes. Research conducted by Dweck et al. (1995) and Hong, Chiu, Dweck, Lin, and Wan (1999) in the academic domain has demonstrated that individuals with entity beliefs (a) tend to focus on or choose performance-oriented goals in achievement contexts (emphasis on “proving” their ability); (b) exhibit a concern about others' judgments and evaluations of their ability; (c) attribute failure at an achievement task to the lack of ability; and (d) exhibit learned helpless behaviors (e.g., negative self-attributions, lowered expectancies, negative affect, decreased persistence, and failure to use constructive task strategies) when faced with achievement setbacks.

In the domain of sport and physical education, an entity belief about athletic ability has been associated with not taking an analytic stance towards one's learning strategies, not asking for help, and giving up when tasks were difficult. An entity belief has also predicted reduced enjoyment of physical activity, increased levels of anxiety, and a tendency to use self-handicapping strategies (e.g., withdraw effort or create obstacles to successes to maintain public and private self-images of competence) (Ommundsen, 2001, 2003). Furthermore, Biddle et al. (2003) found that entity beliefs predicted self-reported motivation towards physical education and sport. Entity beliefs could provide athletes a sense of security because it provides them with a sense that their world of sports is predictable. However, according to Dweck (2000), the danger of entity

belief is that it suggests that we can quickly judge individuals' limitations and then grant them little potential for growth.

Qualitative Results and Analysis

The specific aim of the qualitative part of this study was to analyze and problematize athletic ability as it is perceived, discussed, and valued by student-athletes. Can gender constructions be identified in their narratives of athletic ability, and if so, how is this phenomenon expressed? In the interviews, the student-athletes express athletic ability both in similar and different ways. These perceptions illustrate the entity and incremental views; note, however, that an individual can hold an entity and incremental view simultaneously (Dweck et al., 1995).

A recurrent pattern is that the student-athletes speak of themselves based on their gender, and the identified differences regarding perceptions of athletic ability can, to some extent, relate to them being male or female athletes. This result is interpreted as being a product of gender as a social construction and that individuals act, interact, and perform based on the expectations of their gender, what Lorber (1994) calls gender status. The student-athletes align themselves into "us" in comparison to "them," that is, males as one group and females as the other group. According to Lorber (1994), it is important for people to categorize themselves and others to order society, and gender is one of the primary social categories into which we sort ourselves. In addition, these student-athletes commonly argue that males and females contrast, based on differences regarding bodily traits such as strength, speed, and body size. The prevailing assumption is that physiology relates strongly to an individual's biological sex; thus, physiology is understood as inherent (Lorber, 1994; Hargreaves, 1994; McDonagh & Pappano, 2008).

In summary, the student-athletes stress that strength, speed, and technique are masculine traits, but are traits that all athletes should embody in sports. At this sports school, male and female athletes train together in mixed groups in all sports but football, where they train separately. These compositions may, of course, influence how the student-athletes talk and reflect upon athletic ability in the interviews.

Incremental View

Choosing this sports school is a way to add more training hours to the students' sports practice. The student-athletes predominantly talk about training as something important about improving athletic ability. Good quality training, from competent coaches and challenging training content, is important, and is mentioned by the male football players. To them, it is the school's responsibility to provide a high level of training competence. In addition, they state that it is good that they do not train with the female football players at the school because the quality of their training would be inadequate, referring to female players as inferior. The male floorball players also articulate this preference. They wish they did not have to train with the female floorball players, to get better quality training. This finding indicates that they wish to improve more than they are in the current training setting. Two basketball players, one male, and one female, say that attending a school like this one, with opportunities to train more and specialize, is an approach to more serious training towards senior elite levels in sport. The male basketball player states that if he did not start to specialize at this age, his peers and potential rivals for positions in European basketball leagues would have a head start because early specialization is common in other countries. Some of the female tennis players have initiated and pushed for a change of coach, arguing that they needed to "step up" their training to improve. One of the female football players argues that it is an individual's own responsibility to promote good training sessions and that attitude and motivation in training is as significant as the quality of the training and the coaches. Besides training in general, the female floorball players say that training with male peers at school also provides better quality training than their female club team enjoys, and that training with males has improved them. In summary, this sports school is considered to be a strategic way for the student-athletes with the elite ambition to specialize early.

Besides a similar way to talk of a general need of training to improve one's athletic ability, which illustrates an incremental view as malleable, increasable and controllable (e.g., Dweck, 2000), there are differences interpreted as an expression of one's gender. Most males refer to the *structure* of the training – as in coaches, facilities, contents – which needs to be of high quality. Most female athletes stress *individual* responsibility for good quality training, such as requiring better coaching or stating one's own input and motivation as important. In addition, female floorball players argue that they are empowered because training with

male peers improves them, as they perceive male players are better than females (DiCarlo, 2016; Fink, LaVoi & Newhall, 2016; Larneby, 2016, Priyadharshini & Pressland, 2016). Although these female floorball players have had to face condescending comments from some of their male peers, they argue that they want to keep playing with them because they improve. As research on sport and gender shows, historically female athletes have had to – and still need to – fight for their right to play sports, to sufficient resources, to get access to facilities, and to have general recognition as athletes (Hargreaves, 1994; McDonagh & Pappano, 2008; Messner, 2002). In addition, because they believe that one's possibilities to make a living out of sport are restricted because of structures that hinder and a gender order that discriminates, these beliefs may result in self-initiatives to get something done (Hellborg, 2019; Melkersson, 2017). In contrast, the research indicates that it is natural for males to do sports and that sports are part of masculine socialization. Moreover, male sports are structured to promote the successes of male athletes (Anderson, 2009; Andreasson, 2007; Fundberg, 2003; Hellborg, 2019; Messner, 2002), and may be the answer to why these male student-athletes rely on the sport structure to provide them with all they need. Therefore, it can be argued that the female student-athletes' narratives of responsibility for one's sporting situation could be related to them being used to fighting for resources, which the male student-athletes most probably do not need to do, at least not to the same extent. The interviews show that all student-athletes are aware of a need to train to improve, but the interviews similarly illustrate different perceptions of what it takes to receive adequate training – the males expect to get it, the females have to make sure they do get it.

Entity View

Admittance to this school is a confirmation of one's current athletic skills, in general. It presumes you are in some way gifted or talented and all student-athletes are aware of this fact and are proud of having been admitted to this school. This situation is more clearly exemplified by the male football players who talk of talent as something an individual has, stated as “talent is something you are born with, having the sense of football in your feet” and “how you pass the ball, what you do with the ball on the pitch.” This perspective of technique sees it as an inherent attribute. Talent is brought up in the interviews as the male players undergo a se-

lection cut in their club team during their 9th school year. The selection cut decides if you advance to the next age level and a higher performance level. If a player does not make the cut, he has to quit the club team but is still part of the school training group. Since almost all male players in the club are football students at the school, the club team and school training group are nearly identical regarding players and structure of practices. Thus, normative comparisons are an integral part of the male football players' school training. Therefore, the selection process within the club team affects all football training for these males. Admission to the school is one confirmation of one's skills, but this cut is an even greater confirmation of your skills. In the interviews, the male players argue that "talent" is either sufficient or not to make the cut, putting forth that talent is related to inherent abilities. They know that a player may develop or stagnate at a later age, but that perception seems to be affected by normative comparison, which is a sign of how the entity view is expressed.

As mentioned above, both female and male student-athletes argue that differences in strength, speed, and technique – males being stronger, faster, and more technical and thus better than females – exist because of their biological sex, in other words, an inherent view of ability. Most of the female student-athletes share the experience that since childhood, many peers, parents, and coaches have told them that they are inferior to males (Hargreaves, 1994; McDonagh & Pappano, 2008). Constantly hearing you are inferior compared to male athletes, despite being skilled and empowered, might result in one believing that it may be true (Butler & Hasenfratz, 2017; DiCarlo, 2016; McDonagh & Pappano, 2008; Wigfield et al., 2015). Especially the female floorball and football players describe this scenario. If you perceive that your abilities are dependent of your gender, this relates to an inherent view and that you, thereby, are restricted by your gender about how much you can improve (Young, 2005). Thus, to some extent, these female student-athletes express ability as fixed, unchangeable, and uncontrollable, based on them being female. Research (see Wigfield et al., 2015) has shown that females, stereotyped as being less competent in a particular domain (such as sports), could become more anxious if asked to do difficult tasks because they are afraid that the stereotype might be true of them. Such vulnerability could also lead to them responding more negatively to failure feedback, lowering their expectations and their confidence in their ability to succeed. Male student-athletes disclose presumed male superiority over females, which is a product of masculine socialization (c.f. Anderson, 2009; Andreasson,

2007; Fundberg, 2003). While they argue that it is better for them not to train with females, they also adhere to an entity view. If they presume that females' inferiority is inherent, it is reasonable to infer that they presume males' superiority is inherent as well. Stating that males are better than females is a way to rely on ability as inherent and thus a strategy for males to uphold the gender hierarchy (Lorber, 1994). In line with this thinking, Butler (2014) argue that males are relatively more motivated to prove their abilities and maintain and protect favorable perceptions of their competence, while females tend rather to doubt their abilities and that working hard would allow them to improve.

Summary

The two main results of this study are as follows: (1) entity beliefs increase, and incremental beliefs decrease during the three years as student-athletes in the school under study, and (2) gender perspectives add a further understanding of the beliefs of student-athletes regarding athletic ability.

Since gender was not controlled for in the statistical analysis of the growth curves, the question arose whether gender perception potentially could explain why these student-athletes' growth curves for both entity and incremental beliefs changed the way that they did.

All student-athletes express that training is important to improve one's skills and develop in their respective sports. This phenomenon is an expression of an incremental view, although males and females have different ways of articulating it. It may explain the initially high levels of incremental beliefs and low levels of entity beliefs. Both male and female student-athletes illustrate strands of the entity view of athletic ability, in subtly different ways. They share the sense of being talented and gifted in sports when admitted to the school. All of them express that the normative comparisons with peers influences the belief of your current skills as fixed, and not something you could further develop through training. This observation may explain why the entity beliefs of athletic ability increased, and incremental beliefs decreased. The female athletes also experience the added assumption of females being inherently inferior, restricting their belief of being good enough in the masculine coded world of sports. This result is a product of the chosen research design – merging the two various and independent data collections – which now

adds value to each other's separate analysis. Therefore, we consider this additional insight to be the benefit of parallel mixed-data analysis.

Limitations and Future Research

One study limitation is the small sample size. However, previous research (Maas & Hox, 2005) has supported using multilevel growth model with small sample size. Furthermore, we were interested in gaining insights into this particular cohort and believe that the statistical analysis, with six points of measure, together with the 27 narratives, provided us with both width and depth of insight.

The skewed distribution of males and females within the whole group ($N=78$, 30 female and 48 male) and the interviewees ($N=27$, 16 female and 11 male) is a limitation because the narratives from the 27 student-athletes interviewed cannot be generalized to the larger sample. However, the results from the parallel mixed data analysis with cross-talks and meta-inferences revealed several unique and elucidative results about gender and sport in a sensitive developmental physiological and psychological period in life (see Horn, 2004).

Another limitation regarding the findings inferred from the narratives is that the participants from the sports figure skating, swimming, diving, gymnastics, and badminton are not represented in interviews. Thus, most interviewed student-athletes ($n=22$) are in team sports. However, the whole cohort consists of 61 team sport athletes and 17 individual athletes. Interviews were conducted with 22 out of 61 team sport athletes (36%) and with five out of 17 individual athletes (29%). Although we might miss out on valuable insights from the student-athletes representing figure skating, swimming, diving, gymnastics, and badminton, we believe that percentage-wise the interviews represent student-athletes in both team and individual sports.

The findings for this study are based on a specific cohort at one particular school. Of further importance is research that can examine other periods of time and contexts for the development of athletic beliefs. Future research should replicate this study on different cohorts at the same school and/or similar schools. The assumptions around gender in sport construct males and females as different athletes, which is enforced by the rigidly separated sports practices. This phenomenon leads to power relations and gender hierarchies. Thus, it would be important for a lon-

gitudinal study to examine the awareness of student-athletes of gender constructions and power relations by conducting focus group interviews simultaneously with each measurement period.

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