

# The Relationship between Positive Thinking and Individual Characteristics: Development of the Soccer Positive Thinking Scale

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The objectives of Study 1 were to develop the Soccer Positive Thinking Scale, and to examine its reliability and validity. The objectives of study 2 were to examine the relationship between positive thinking and individual characteristics, including the degree of demonstration of ability, competition anxiety, and goal orientation. In Study 1, the questionnaire was given to 188 male Soccer players (Mage: 19.0, SD: 1.9). The scale's psychometric properties were tested using item-level analyses, exploratory factor analysis (major factor method with promax rotation), Cronbach's alpha coefficients, and an analysis of the correlations between subscales. We created the Soccer Positive Thinking Scale as a questionnaire to assess positive thinking, resulting in four subscales: Self-Encouragement Thinking, Self-Assertive Thinking, Self-Instructive and Control Thinking, and Self-Affirmative Thinking. In Study 2, the questionnaire was administered to male 247 Soccer players (Mage: 18.8, SD: 1.9). We conducted t-tests and analyses of variance to examine whether there was a difference in positive thinking subscale scores based on individual characteristics. Results showed that players with high competition anxiety used Self-Instructive and Control Thinking, whereas those whose goal-orientation profile was task-oriented used Self-Instructive and Control Thinking and Self-Encouragement Thinking. Moreover, those whose goal-orientation profile was ego-oriented used Self-Assertive Thinking and Self-Affirmative Thinking. The results of these studies suggest that it is important to develop the type of positive thinking best suited to the individual.

**Keywords:** Positive thinking, Individual characteristics, Competition anxiety, Goal orientation

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## 1. Introduction

Sport players constantly struggle with psychological pressure. Previous research indicates that anxiety has a considerable impact on performance (Humara, 1999). Therefore, we propose that mental training is needed in order to develop appropriate coping strategies. One type of mental training is positive thinking, a technique that entails interpreting a stressor as advantageous and utilizing it to improve motivation and confidence, leading to optimal arousal and heightened concentration (Inomata, 1997). It has been shown that positive thinking increases the ability to deal with stressors effectively (Naseem and Khalid, 2010) and has a positive influence on mental health.

Moreover, "positive psychology" has been established as a new field of psychology in recent years, with a focus on drawing out human strengths (Seligman and Csikszentmihalyi, 2001). Positive thinking may support performance and mental health by drawing out human strengths. Therefore, many people could benefit from developing their positive thinking skills. We examined positive thinking, beginning with an investigation of its actual contents.

Some studies have shown a relationship between performance and psychological state at the Olympic level. Greenleaf et al. (2001) interviewed 15 such athletes, whereas Orlick and Partington (1988) interviewed 75 athletes and obtained questionnaire data from another 160. Other examples of factors

influencing performance are motivation, focus of attention, confidence, and psychological preparation. Previously, only general personality tests were used to evaluate the influence of psychological factors on sports performance. In recent years, sports-specific tests have been developed. One such measure is the Psychological Skills Inventory for Sport (PSIS; Mahoney et al., 1987), which contains six factors (motivation, confidence, anxiety control, mental preparation, team emphasis and concentration). However, a wider variety of psychological measures is needed in the sport context, because interventions to strengthen players' psychological skills must be multifaceted. The multiple functions of positive thinking with respect to individual characteristics are so far unclear.

Study 1 contributes to meeting the above need by developing a measure of positive thinking applied to soccer: the Soccer Positive Thinking Scale, which clarifies the components of positive thinking during good performance. In Study 2, this scale was administered to male soccer players; subscale scores were then computed to examine individual differences in the content of thoughts associated with sporting ability. In this study, we examined the differences in subscale scores, focusing on the frequency of use of "the contents of positive thought" during good performances. The first hypothesis was that there is no difference in the subscale scores of the Soccer Positive Thinking Scale according to ability. Since all subscales are regarded as positive thinking for each player, regardless of the degree of demonstration of ability. In Study 2, the objective was also to examine the relationship between positive thinking and individual characteristics. To measure individual characteristics, data were collected on competition anxiety and goal orientation. The ability to cope with pressure and anxiety is an integral part of sports, particularly among elite athletes (Hardy et al., 1996). In addition, positive thinking can aid individuals in coping with anxiety (Pullman, 1988). Moreover, goal orientation is considered to be a comparatively stable individual characteristic (Fujita et al., 2013). The role of goal orientation in learning and achievement is also an integral part of sports (Pintrich, 2000). It has been suggested that positive thinking is associated with good performance on achievement tasks (Goodhart, 1986). Therefore, these factors can be considered as the individual characteristics relevant to sport and positive thinking. That is, we considered these factors

as suitable individual characteristics to measure. The degree of anxiety and type of goal orientation differ by individual. Moreover, Inomata (1997) said that positive thinking leads to an optimal arousal level. The optimal arousal level depends on individual characteristics. Thus, the second hypothesis was proposed, namely that the content of positive thought differs based on individual characteristics.

We examined whether there is a difference in the subscale scores of the Soccer Positive Thinking Scale based on the degree of demonstration of ability, competition anxiety, and goal orientation. The results will inform the development of multiple methods of instruction of positive thinking in consideration of individual characteristics.

## 2. Study 1

### 2.1. Objectives

The objectives of Study 1 were to develop the Soccer Positive Thinking Scale and to examine its reliability and validity.

### 2.2. Methods

#### 2.2.1. Scale Development

The initial item pool was comprised of a number of items created from interviews of male soccer players (six high school students, three college students, and one professional). Semi-structured one-to-one interviews were conducted between the investigator and the player. The players were asked about their thoughts when their game performance was good. Interview data were transcribed verbatim and analyzed qualitatively by the investigator. Face validity was determined in consultation with a colleague. The final questionnaire consisted of 26 items, divided into those measuring self-encouragement (9items), self-appeal to others (7items), thinking calmly about play (7items), and self-confidence (3items). In other words, the prediction result of the factors was the four.

#### 2.2.2. Ethics Statement

We gave the following explanations to each team leader orally, and to all players via a document. The study's objective was explained first. We informed the participants that they had the right to refuse to reply, and we carefully explained the treatment of the

data obtained. We then acquired written and informed consent from all participants. Additionally, each team leader provided a spoken explanation to all team players because the team leaders wished to administer the questionnaire to suit the schedule of the team. We declare that the highest priority was placed on respecting human rights and ensuring safety, and that strict ethical practices were adhered to throughout the study.

### 2.2.3. Participants

The questionnaire was given to male soccer players who registered with four universities and two high schools soccer teams in Japan from September 2013 to November 2013. Each team leader distributed the questionnaire to players and collected it after completion. After excluding incomplete questionnaires, data from a total of 188 players (university students:  $N = 138$ , high school students:  $N = 50$ ,  $Mage$ : 19.0,  $SD$ : 1.9) were used for analysis. Sixty-two participants (university students:  $N = 62$ ,  $Mage$ : 20.2,  $SD$ : 1.1) were at national level, and 126 participants (university students:  $N = 76$ , high school students:  $N = 50$ ,  $Mage$ : 18.4,  $SD$ : 1.9) were at regional level.

### 2.2.4. Procedure

First, informed consent was obtained. It was explained to the participant that there was no obligation to answer any given question. The questionnaire instructed participants to answer questions about the frequency of thoughts they have during good performances. They were also instructed that there were no right or wrong answers. Responses were given on a seven-point Likert scale from 1 (never) to 7 (always), with high scores indicating a high use of positive thinking.

### 2.2.5. Analysis

The scale's psychometric properties were tested using item-level analyses, exploratory factor analysis (major factor method with promax rotation), Cronbach's alpha coefficients, and an analysis of the correlations between subscales. A test-retest method was conducted for confirming reliability. Results of the factor analysis and predicted outcomes were compared to confirm validity, using SPSS 16.0J (SPSS Japan, 2007).

## 2.3. Results

### 2.3.1. Item-level analyses

Visual inspection of the histograms showed a nearly normal distribution for all items, with no evidence of a ceiling or floor effect. Therefore, we decided to perform an exploratory factor analysis on all 26 items.

### 2.3.2. Factor Analysis

An exploratory factor analysis was performed on all 26 items. As factors were expected to be correlated (because of similar content across items), a major factor method with promax rotation was employed. With a minimum eigenvalue of 1.0, six factors were extracted. Two items with factor loadings below .35 were excluded and then the principal factor analysis was repeated. The final Soccer Positive Thinking Scale contained 24 items across four factors, as described below (**Table 1**).

The first factor contained 9 items, such as "I will do my best for my teammates who cannot take part in the game" and "I would absolutely like to win and I would absolutely like to not lose." This factor represented the type of thoughts that encourage the player with strong motivations of responsibility and victory. We therefore named it "*Self-Encouragement Thinking*."

The second factor contained 6 items, such as "I would like to show my best performance to the spectators" and "I will do my best, because my family and friends support me." This factor represented the player's wish for others to appeal his performance. We therefore named it "*Self-Assertive Thinking*."

The third factor included 6 items, such as "I will concentrate only on the position of my opponent" and "Because thinking about spectators will make me nervous, I don't care about them." This factor showed the type of thoughts that guide the player's performance and calms him. We therefore named it "*Self-Instructive and Control Thinking*."

The fourth factor included 3 items, such as "I can do as I have imagined" and "Mistakes are irreversible, so I don't care about them." This factor showed confident thoughts and was named "*Self-Affirmative Thinking*."

### 2.3.3. Verification of Reliability

To examine the reliability of the 24 items scale, Cronbach's alpha coefficients were calculated.

**Table 1** Factor Loadings in a Principal Factor Analysis with Promax Rotation of the Soccer Positive Thinking Scale

Scale	Factor			
	1	2	3	4
<b>1. Self-Encouragement Thinking (<math>\alpha = .91</math>)</b>				
I will act without forgetting to consider the team.	.96	-.15	-.03	-.12
I will feel happiness from participating in a game.	.81	-.05	.03	-.10
I would absolutely like to win and I would absolutely like to not lose.	.80	.09	-.22	-.02
I will do my best for those who support me.	.63	.16	.14	-.04
I will do my best for my teammates who cannot take part in the game.	.62	.11	.04	-.02
I can win. I can do it.	.61	.02	-.06	.27
I fight with a spirit of a challenger.	.59	.10	.04	.03
I will feel the happiness of meeting with the chance.	.50	.14	.27	.01
I can do it, because I have been practicing.	.48	.00	.11	.35
<b>2. Self-Assertive Thinking (<math>\alpha = .90</math>)</b>				
I will enjoy the game, because the spectators are watching.	-.11	.95	-.01	.05
I am happy, because I can play in front of many spectators.	-.05	.87	.02	-.01
I would like to show my best performance to the spectators.	.16	.82	-.23	.01
I will do my best, because my family and friends support me.	.08	.70	.05	-.06
I will become a hero. If I can perform well now, I can become a hero.	-.04	.67	.10	.14
The many spectators cheer for me, because I became evaluated existence.	.19	.47	.21	-.12
<b>3. Self-Instructive and Control Thinking (<math>\alpha = .84</math>)</b>				
I will concentrate only on predicting what my opponent will do.	-.09	.07	.90	-.06
I will concentrate only on the position of my opponent.	.03	.07	.87	-.14
I will concentrate on how to use my body (motion of muscles).	-.12	.17	.65	-.03
It is okay if I concentrate on my playing.	-.03	.00	.64	.18
I will play in the same way that I practice, without being too conscious of the game.	.15	-.06	.56	.11
Because thinking about spectators will make me nervous, I don't care about them.	.04	-.25	.53	.12
<b>4. Self-Affirmative Thinking (<math>\alpha = .78</math>)</b>				
I feel that I can play well.	.01	.14	-.14	.87
I can do as I have imagined.	-.10	.06	.01	.80
Mistakes are irreversible, so I don't care about them.	-.06	-.18	.28	.65
<b>factor correlation</b>				
1	1.00	.68	.56	.51
2		1.00	.46	.32
3			1.00	.38
4				1.00

The coefficient was .94 for the overall scale, with values ranging between .78 and .91 for each factor, indicating acceptable internal consistency reliability. Then, to examine internal consistency, we calculated the correlation matrix between the items. No items showed negative correlations. Moreover, a test-retest method was conducted for about one-quarter of the participants ( $N = 50$ ) about one month after the first questionnaire administration. Similar results of the factor analysis and positive correlations between each subscales were revealed (Self-Encouragement Thinking [ $r = .67$ ,  $p < .01$ ], Self-Assertive Thinking [ $r = .63$ ,  $p < .01$ ], Self-Instructive and Control Thinking [ $r = .83$ ,  $p < .01$ ], Self-Affirmative Thinking [ $r = .64$ ,  $p < .01$ ]). Therefore, the reliability of the scale was confirmed.

#### 2.3.4. Verification of Validity

We compared the predicted outcome of the factor analysis with the results of the factor analysis. Four factors were extracted. The first factor consisted

of nine items related to encouraging oneself. This corresponds to “*Self-Encouragement Thinking*.” The concordance of the items was 78%. The second factor consisted of seven items related to self-appeal to others. This corresponds to “*Self-Assertive Thinking*.” The concordance of the items was 86%. The third factor consisted seven items related to thinking calmly about play. This corresponds to “*Self-Instructive and Control Thinking*.” The concordance of the items was 86%. The fourth factor consisted of three items related to self-confidence. This corresponds to “*Self-Affirmative Thinking*.” The concordance of the items was 100%. These results indicate acceptable construct validity.

#### 2.3.5. Correlation between Subscales

Each subscale has a different number of items. Thus, average scores were calculated by dividing the total scores by the number of items in the scale. The averages of the four subscale scores of the Soccer Positive Thinking Scale were as follows: Self-



Encouragement Thinking ( $M = 5.24$ ,  $SD = 1.09$ ), Self-Assertive Thinking ( $M = 4.66$ ,  $SD = 1.33$ ), Self-Instructive and Control Thinking ( $M = 4.35$ ,  $SD = 1.18$ ), Self-Affirmative Thinking ( $M = 4.69$ ,  $SD = 1.15$ ). In addition, the correlations between subscales were calculated, revealing positive correlations (Table 2).

### 3. Study 2

#### 3.1. Objectives

In Study 2, we measured positive thinking using the scale prepared in Study 1. This study aimed to examine the individual differences in the contents of positive thinking in relation to the degree of demonstration of sporting ability. It also aimed to examine the relationship between positive thinking and individual characteristics. Two hypotheses were verified.

#### 3.2. Methods

##### 3.2.1. Ethics Statement

We gave the following explanations to each team leader orally, and to all players via a document. The study's objective was explained first. We informed the participants that they had the right to refuse to reply, and we carefully explained the treatment of the data obtained. We then acquired written and informed consent from all participants. Additionally, each team leader provided a spoken explanation to all team players because the team leaders wished to administer the questionnaire to suit the schedule of the team. We declare as Study 1 that the highest priority was placed on respecting human rights and ensuring safety, and that strict ethical practices were adhered to throughout the study.

##### 3.2.2. Participants

The questionnaire was given to male soccer players who registered with four universities and three high schools soccer teams in Japan from February 2014 to May 2014. Each team leader distributed the questionnaire to players and collected it after completion. After excluding incomplete questionnaires, data from a total of 247 players (university students:  $N = 173$ , high school students:  $N = 74$ , Mage: 18.8, SD: 1.9) were used for analysis. Sixty participants (university students:  $N = 60$ , Mage: 19.6, SD: 1.2) were at national level, and 187 participants (university students:  $N = 113$ , high school students:  $N = 74$ , Mage: 18.6, SD: 2.0) were at regional level.

##### 3.2.3. Contents of the Study

###### 1) Personal Profiles

We collected personal profile data including name, age, and team.

###### 2) The Soccer Positive Thinking Scale

We measured positive thinking using the scale prepared in Study 1. High subscale scores indicate that the player frequently made practical use of positive thinking and had thoughts whose primary function was positive thinking.

###### 3) Degree of Demonstration of Ability

A question was formulated to assess the degree to which participants felt they demonstrated their sporting ability. The question was the following: "To what degree do you think you demonstrated of your ability in this season of the game?" Answers were provided in the form of a percentage.

###### 4) Sport Competition Anxiety Test

We used the Sport Competition Anxiety Test (SCAT; Martens, 1977) to measure competition anxiety. This scale was developed specifically to measure trait anxiety in sports and consists of 15 items. Items are rated on a three-point Likert scale from 1 (rarely) to 3 (often).

**Table 2** Correlation between Subscales of the Soccer Positive Thinking Scale

Subscale	Thinking			
	1. Self-Encouragement	2. Self-Assertive	3. Self-Instructive and Control	4. Self-Affirmative
1	1.00	.69**	.51**	.46**
2		1.00	.42**	.30**
3			1.00	.34**
4				1.00

\*\*  $p < .01$

5) Goal Orientation Scale

We used the Goal Orientation Scale (Isogai, 2001) to measure task orientation and ego orientation. Goal orientation represents the different goals of individuals. Task orientation emphasizes the progress of skills, whereas ego orientation emphasizes comparisons with others. This scale was developed to measure goal orientation in sports and consists of 13 items, divided into task orientation (7 items), and ego orientation (6 items). Items are rated on a five-point Likert scale from 1 (not at all) to 5 (a lot).

3.2.4. Analysis

The subscale scores of the Soccer Positive Thinking Scale were computed. We conducted t-tests and analyses of variance to examine whether there was a difference in the subscale scores of the Soccer Positive Thinking Scale based on individual characteristics. SPSS 16.0J (SPSS Japan, 2007) was used.

3.3. Results and Discussion

3.3.1. Individual Differences in the Practical Use of Positive Thinking

We investigated the subscale scores of each participant. Subscale scores were calculated in the same manner as Study 1. Of the four subscales, we focused on the thoughts that were used to the greatest and least extent by participants. First, we investigated the proportion of people whose score for Self-Encouragement Thinking was highest. Similarly, we investigated the proportions for the other subscales of the Soccer Positive Thinking Scale (Table 3). Table 3 illustrates the thoughts most and least used as positive thinking.

The highest-rated subscale was Self-Encouragement Thinking (43.7%), followed by equal rates of use of Self-Assertive Thinking (21.4%) and Self-Affirmative Thinking (21.4%), and, lastly Self-Instructive and Control Thinking (13.5%). More than 40% of participants endorsed Self-Encouragement

Thinking, which was considered the main form of positive thinking. Furthermore, we investigated the subscale scores on which each participant scored the lowest, representing the least used form of positive thinking. The least endorsed subscale was Self-Instructive and Control Thinking (33.7%), followed by Self-Assertive Thinking (29.2%), Self-Affirmative Thinking (28.7%), and lastly Self-Encouragement Thinking (8.4%).

3.3.2. Differences in Positive Thinking by the Degree of Demonstration of Ability

Participants' ratings of the degree to which they had demonstrated their sporting ability in game revealed an average score of 72.5%. Using this value, we established two groups (high group: > 72.5, low group: < 72.5). In order to examine differences in the degree of demonstration of ability (high group: N = 132 and low group: N = 115), t-tests were conducted on the subscale scores of the Soccer Positive Thinking Scale. Result showed no significant differences. Although the degree of demonstration of ability was assessed by self-evaluation, the results suggested that the content of positive thought was unrelated to participants' impression of their own ability. Thus, the first hypothesis was supported.

3.3.3. Differences in Positive Thinking by Competition Anxiety

The average score on the Sport Competition Anxiety Test was 19.4. Two groups were established based on the average score (high group: > 19.4, low group: < 19.4). In order to examine differences in the positive thinking by competition anxiety (high group: N = 138, low group: N = 109), t-tests were conducted on the subscale scores of the Soccer Positive Thinking Scale (Table 4). The result showed a significant difference in Self-Instructive and Control Thinking based on competition anxiety ( $t [241] = 4.13, p < .01$ ). Scores on Self-Instructive and Control Thinking in the high-anxiety group were higher than those in the low-anxiety group. This result showed that

**Table 3** Proportion of People Who Showed the Highest Score and Lowest Score in Subscales of the Soccer Positive Thinking Scale (%)

Subscale		Thinking			
		Self-Encouragement	Self-Assertive	Self-Instructive and Control	Self-Affirmative
Score	Highest	43.7	21.4	13.5	21.4
	Lowest	8.4	29.2	33.7	28.7

**Table 4** Differences in Soccer Positive Thinking Based on Competition Anxiety

Subscale	Competition anxiety		
		M	SD
Self-Encouragement	High	5.16	1.04
	Low	5.14	1.03
Self-Assertive	High	4.74	1.29
	Low	4.56	1.25
Self-Instructive and Control	High	4.82	.94
	Low	4.32**	.95
Self-Affirmative	High	4.59	1.13
	Low	4.61	1.01

\*\*p <.01    Comparison with high group

players with high competition anxiety use more Self-Instructive and Control Thinking strategies to affect their performance than players with low competition anxiety.

### 3.3.4. Difference in Positive Thinking by Goal Orientation

Goal orientation includes task and ego orientation. People who are task oriented aim to achieve mastery of a task or to make individual progress, while those with strong ego orientation aim to achieve a predominant standing compared to others (Skaalvik, 1997). The average score for task orientation measured on the Goal Orientation Scale was 27.4, and the average score for ego orientation was 22.7. In sport psychology, athlete profiles can be analyzed based on the type of goal orientation (Fujita et al., 2013). We classified participants into four categories based on their average scores on both subscales, as follows. Category 1: Both the task orientation and ego orientation scores were higher than the average score (goal orientation group:  $N = 82$ ). Category 2: The task orientation score was higher than the average score, and ego orientation was lower than the average score (task orientation group:  $N = 35$ ). Category 3: The task orientation score was lower than the average score, and ego orientation was higher than the average score (ego orientation group:  $N = 30$ ). Category 4: Both the task orientation and ego orientation scores were lower than the average score (non-orientation group:  $N = 100$ ).

In order to examine differences in the positive thinking between the categories (goal orientation group, task orientation group, ego orientation group, and non-orientation group), a one-way analysis of variance was conducted on the subscale scores of the Soccer Positive Thinking Scale. Since the results

showed significant differences between categories on all subscales, multiple comparisons using the Tukey test ( $p = .05$ ) were performed. The results are presented in **Table 5**.

All subscale scores of the goal orientation group were significantly higher than the non-orientation group. Higher goal orientation seems to be associated with a preference for positive thinking. Moreover, the Self-Encouragement Thinking and Self-Instructive and Control Thinking scores of the goal orientation group were significantly higher than those of the ego orientation group. Lastly, the Self-Assertive Thinking score of the goal orientation group was significantly higher than that of the task orientation group. Thus, there is an influence of goal orientation on the nature of the positive thought used.

### 3.3.5. Prediction of Positive Thinking

Since the subscale scores of the Soccer Positive Thinking Scale differed by sport competition anxiety, task orientation, and ego orientation, we decided to investigate the extent to which each of these three factors explains the Soccer Positive Thinking. We conducted multiple regression analyses, with the subscales of the Soccer Positive Thinking Scale as dependent variables and sport competition anxiety, task orientation, and ego orientation as the independent variables. The results are presented in **Table 6**.

Competition anxiety and task orientation significantly influenced Self-Instructive and Control Thinking. In order to suppress competition anxiety and achieve individual aims, Self-Instructive and Control Thinking tended to be adopted. Task orientation had a significant influence on Self-Encouragement Thinking. Because task orientation drives individual progress, it seems logical that highly

**Table 5** Differences in Soccer Positive Thinking Based on Goal Orientation

Subscale	ss	df	ms	F	p	Multiple comparisons		
						Category	M	SD
Self-Encouragement (M = 5.24, SD = 1.09)	31.325	3	10.442	11.029	.00	Goal orientation	5.56	.90
						Task orientation	5.13	.88
	222.476	235	.947			Ego orientation	5.04*	.95
	253.801	238				Non-orientation	4.71**	1.10
Self-Assertive (M = 4.66, SD = 1.33)	39.497	3	13.166	8.994	.00	Goal orientation	5.09	1.20
						Task orientation	4.17**	1.18
	349.855	239	1.464			Ego orientation	4.68	1.30
	389.352	242				Non-orientation	4.24**	1.19
Self-Instructive and Control (M = 4.35, SD = 1.18)	27.198	3	9.066	10.633	.00	Goal orientation	4.93	.93
						Task orientation	4.52	.74
	203.771	239	.853			Ego orientation	4.19**	.84
	230.969	242				Non-orientation	4.22**	1.00
Self-Affirmative (M = 4.69, SD = 1.15)	12.927	3	4.309	3.988	.01	Goal orientation	4.85	1.01
						Task orientation	4.53	.85
	259.333	240	1.081			Ego orientation	4.60	1.24
	272.260	243				Non-orientation	4.31**	1.05

\*\*p < .01 \*p < .05 Comparison with goal orientation

**Table 6** Prediction of Soccer Positive Thinking

Independent variables	Dependent variables							
	Self-Encouragement		Self-Assertive		Self-Instructive and Control		Self-Affirmative	
	$\beta$	t	$\beta$	t	$\beta$	t	$\beta$	t
Competition anxiety	-.03	-.49	.09	1.43	.28**	4.81	-.01	-.17
Task orientation	.39**	5.02	.05	.61	.34**	4.32	.12	1.38
Ego orientation	.10	1.22	.35**	4.27	.02	.20	.20*	2.30
**p < .01 *p < .05	$R^2 = .20$		$R^2 = .15$		$R^2 = .20$		$R^2 = .08$	

task-oriented players tend to encourage themselves. On the other hand, ego orientation significantly predicted Self-Assertive Thinking and Self-Affirmative Thinking. Highly ego-oriented players tend to appeal to others or to persuade themselves to be confident. Thus, the second hypothesis was supported.

#### 4. Summative Discussion

In Study 1, the Soccer Positive Thinking Scale was created as a questionnaire to assess positive thinking (Table 1). It was built based on the importance of developing specialized psychometric scales for sport. Study 1 made it possible to identify the types of positive thinking used when performance is good, resulting in four subscales: Self-Encouragement Thinking, Self-Assertive Thinking, Self-Instructive

and Control Thinking, and Self-Affirmative Thinking. The factors extracted described self-encouraging thinking, as well as self-control thinking. Moreover, the factors extracted described thoughts that included consciousness of others, as well as those that did not include consciousness of others. From these results, it was hypothesized that the different types of positive thinking would play different roles and that the role would change based on individual characteristics.

In Study 2, the differences in the subscale scores of the Soccer Positive Thinking Scale created in the Study 1 were examined, including analyses of the relevance of positive thinking based on individual characteristics. An investigation of individual differences in the practical use of positive thinking revealed that more than 40% of participants engaged in Self-Encouragement Thinking, which was considered the main types of positive thinking



(**Table 3**). More than 40% of participants engaged in Self-Assertive Thinking and Self-Affirmative Thinking, but about 60% of participants infrequently used these two types of thought (**Table 3**). This result shows that individual differences are large. When a coach says to a player “Use positive thinking!”, the coach imagines the types of positive thinking that functions for him and believes that he is encouraging the player to use a types of positive thinking that will leads to a strong performance. However, the types of thoughts that work as positive thinking for a coach may not work for a player. It is important to mention here that there was no difference in the four subscale scores of the Soccer Positive Thinking Scale according to ability. If one subscale receives a particularly high score, this is regarded to reflect positive thinking that is particularly effective for enhancing performance. Note that scores differ according to competition anxiety and goal orientation. That is, the frequency of use of different types of positive thought varies according to individual characteristics. The results of Study 2 suggest that it is important to use the types of positive thought that are best suited to the individual and to avoid excessive generalization of what constitutes a “desirable” type of thought.

It has been shown that a reduction of competition anxiety leads to improved performance (Wayne and Bruce, 1983). As such, suitable measures to minimize competition anxiety are required. We investigated the thoughts that occurred when performance was good, and therefore elucidated the types of thought that players with high competition anxiety utilize as positive thinking. The statistical test results showed that players with high competition anxiety appear to rely on thoughts that control their competition anxiety and thus allow their attention to be directed toward the game (**Table 6**). It was suggested that Self-Instructive and Control Thinking aid in coping with anxiety and associated strain.

It is thought that goal orientation is associated with motivation (Kaplan and Maehr, 2007). Fujita et al. (2013) examined the relationship between goal orientation and competition motivations, such as fighting spirit and self-realization motivation, and victory motivation. They suggested that fighting spirit and self-realization motivation in the task orientation group are higher than those in the non-orientation group. And, victory motivation in the ego orientation group is higher than that in the non-orientation group.

Moreover, Inomata (1997) indicated that the mental skill of positive thinking helps improve motivation. In this study, therefore, in extracting the thoughts that occurred when performance was good, we examined what kind of the contents of thoughts relates to rise of motivation as positive thinking, according to the different types of goal orientation. Our results suggested that Self-Encouragement Thinking could help the task orientation group to increase their motivation and thus to assist in their personal goals (**Table 6**). In contrast, it may be that Self-Assertive Thinking and Self-Affirmative Thinking could help the ego orientation group to increase their motivation and thus work toward their goal of pleasing others by a winning performance (**Table 6**). That is, while the group that was highly conscious of task orientation directed attention toward itself, the group that was highly conscious of ego orientation directed attention toward others. It appears that in goal orientation and positive thinking, there is a relevant distinction between turning one’s consciousness to oneself or to others. It is clear that there is an influence of goal orientation on the content of positive thought.

## 5. Conclusions

In Study 1, the Soccer Positive Thinking Scale was created as a questionnaire to assess positive thinking. Study 1 made it possible to identify the types of positive thinking used when performance is strong, resulting in four subscales: Self-Encouragement Thinking, Self-Assertive Thinking, Self-Instructive and Control Thinking, and Self-Affirmative Thinking. In Study 2, the differences in the subscale scores of the Soccer Positive Thinking Scale created in Study 1 were examined, including analyses of the relevance of positive thinking based on the degree of demonstration of ability and individual characteristics. Although the degree of demonstration of ability was measured by self-evaluations, the results suggest that the content of positive thought is invariant with respect to the degree of demonstration of ability. Further, by investigating the thoughts that occur when performance was good, it was suggested that players with high competition anxiety used Self-Instructive and Control Thinking, whereas those whose goal orientation profile was task-oriented used Self-Instructive and Control Thinking and Self-Encouragement Thinking. In addition, ego orientation significantly influenced Self-Assertive Thinking and

## Self-Affirmative Thinking.

Although the need for positive thinking had already been shown, the effect of individual characteristics had not been sufficiently explored. From the results of Study 1 and Study 2, it is clear that how positive thought varies according to individual characteristics is important. It is now possible to measure the types of positive thinking suitable for an individual by using the Soccer Positive Thinking Scale created in Study 1. This may help develop the positive thinking skills based on individual characteristics if used in combination with measures of competition anxiety and goal orientation.

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